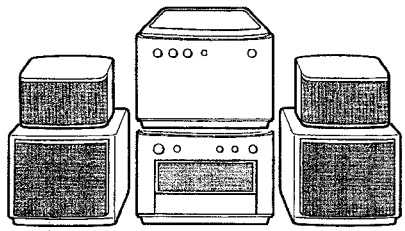
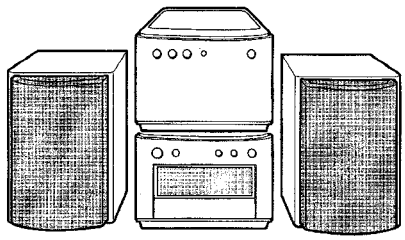
aiwa

aiwa SERVICE

XR-M70
XR-M75



XR-MD70



XR-MD75

COMPACT DISC STEREO SYSTEM

• BASIC CD MECHANISM: KSM-542 ABA

• TYPE: U

SERVICE MANUAL

REVISION PUBLISHING

This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-987-270-4T1).

S/M Code No. 09-987-270-4R1

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SPECIFICATIONS

MAIN UNITS

FM tuner section

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

AM tuner section

Tuning range	530 kHz to 1710 kHz (10 kHz step) 531 kHz to 1602 kHz (9 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

Amplifier section

Power output	16 watts per channel, Min. RMS at 8 ohms, from 60 Hz to 20 kHz, with no more than 1% Total Harmonic Distortion
Total harmonic distortion	0.1 % (10 W, 1 kHz, 8 ohms, DIN AUDIO)
Inputs	TAPE IN: 500 mV AUX IN: 500 mV
Outputs	SUPER WOOFER: 1.7 V SPEAKERS: accept speakers of 8 ohms or more LINE OUT: 340 mV PHONES (stereo minijack): accepts headphones of 32 ohms or more

Compact disc player section

Laser	Semiconductor laser (λ = 780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

SPEAKER SYSTEM (XR-M70)

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Main speaker: 100 mm (4 inches) cone type Cardioid Speaker: 60 mm (2 3/8 inches) cone type
Impedance	8 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W × H × D)	144 × 202 × 185 mm (5 3/4 × 8 × 7 3/8 inches)
Weight	1.8 kg (3 lb. 15 oz)

SPEAKER SYSTEM (XR-M75)

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer: 100 mm (4 inches) cone type Tweeter: 25 mm (1 inch) cone type
Impedance	8 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W × H × D)	140 × 202 × 190 mm (5 3/4 × 8 × 7 1/2 inches)
Weight	1.9 kg (4 lb. 3 oz)

General

Power requirements	120 V AC, 60 Hz
Power consumption	40 W
Dimensions (W × H × D)	CD player unit 144 × 101.5 × 176.1 mm (5 3/4 × 4 × 7 inches) Tuner/amplifier unit 144 × 101.5 × 208 mm (5 3/4 × 4 × 8 1/4 inches)
Weight	CD player unit 0.88 kg (1 lb. 15 oz) Tuner/amplifier unit 2.4 kg (5 lb. 5 oz)

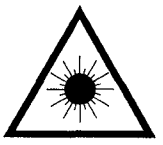
- Design and specifications are subject to change without notice.
- The word "BBE" and the "BBE symbol" are trademarks of BBE Sound,Inc.
  Under license from BBE Sound,Inc.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

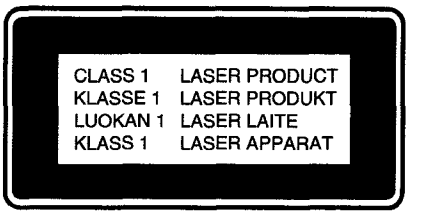
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

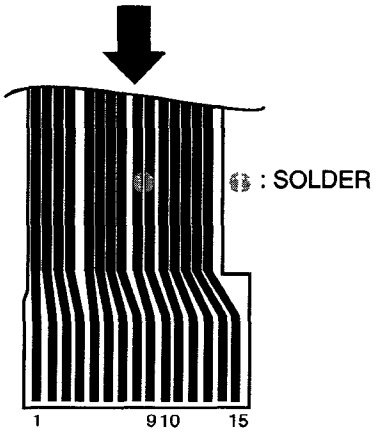
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

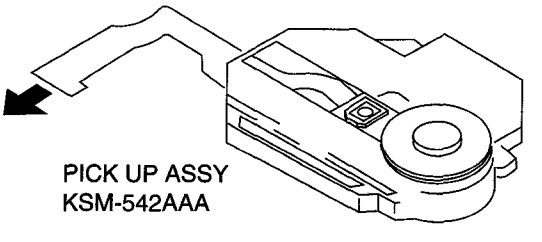


Precaution to replace Optical block (KSM-542AAA)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.





CAUTION WHEN SERVICING

Note: Connect the FG connectors of the amplifier block and the CD block to perform the operation (power-on) check.

Required Jigs

CD block:	For CD JIG, P-CD TORIKOSHI	SV-J00-018-010

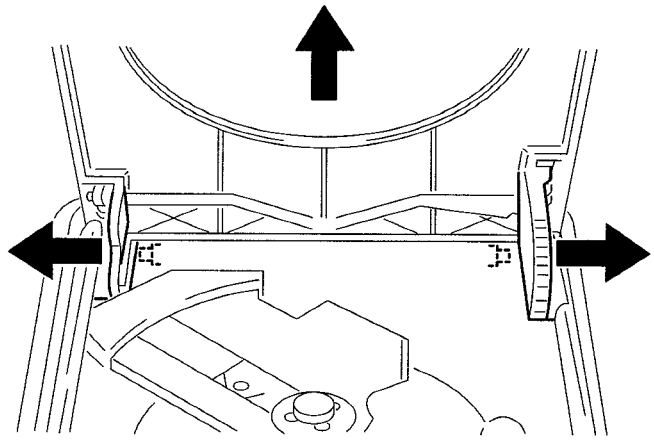
DISASSEMBLY INSTRUCTIONS

Amplifier block:

1. Remove the cabinet. QT1-3-10 × 6, VT1-3-10 × 10
2. Remove the screws of the POWER board (left side). VTT-3-6 × 1
3. Remove the TUNER board (right side) VTT-3-6 × 1
   Remove the earth terminal of the heat sink side. VTT-3-8 black × 1
4. Remove the screws of the power supply board. VTT-3-15 × 4
   Remove the power supply transistor. (heat sink side) VTT-3-8 black × 1
5. Remove the wire. Connector, POWER board → DISPLAY board, Loading tray motor
   FFC, POWER board → DISPLAY board
6. Raise the POWER board.

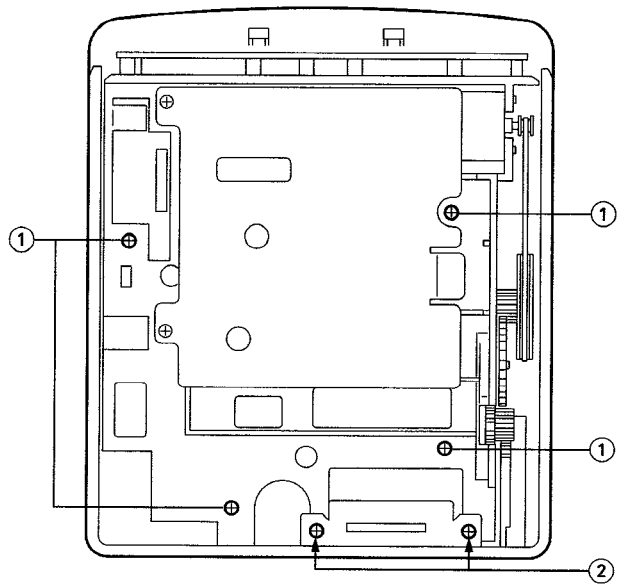
CD block:

1. Remove the cabinet. QT1-3-10 × 6, VT1-3-10 × 3
2. Disassemble the CD block as follows.
   - Remove the CD lid.



Disengage the hooks by opening here to the right and left.

- Remove the CHASSIS CD. VT1-3-12 × 4 ..... ①
  Remove the FUNCTION board. VT1-3-8 × 2 ..... ②



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	S8-320-570-000		IC,TA2057N
	S8-492-570-000		IC,TC9257F
	S9-187-230-010		IC,TMP87CM23F-2336
	87-017-726-080		IC,BU4052BCF
	87-001-607-080		IC,BA4558F-E2
	87-070-101-010		IC,TC9284AF
	87-070-134-010		IC,TA2065F
	87-A20-157-010		IC,TA2092N
	S9-187-400-020		IC,TMP87CM40AF-4A78
	87-001-982-010		IC,TA7291S
	S4-038-540-000		IC,BH3854AFS
	87-A20-056-010		IC,BA3880S
	87-022-899-010		IC,STK4122MK2
TRANSISTOR			
	89-327-143-080		C-TR,2SC2714
	87-026-230-010		C-TR,DTA114YK
	89-502-114-080		C-FET,2SK211-Y/GR
	89-502-094-080		C-FET,2SK209Y
	89-327-126-080		C-TR,2SC2712GR
	87-026-213-010		C-TR,DTC114YK
	87-026-200-080		TR,DTC114ES
	S7-855-000-020		TR,PE8550B,C
	87-026-239-080		C-TR,DTC114TK/TKA
	89-111-625-080		C-TR,2SA1162GR
	S7-805-000-020		TR,PE8050B,C,D
	89-213-702-010		TR,2SB1370E/F
DIODE			
	87-027-513-010		ZENER,IN5232B 5.6V1/2W
	87-070-136-080		ZENER,5.1V
	82-135-799-010		DIODE,IN4148
	S0-100-221-200		ZENER,2.2V
	82-596-799-010		DI,1N4001B
	S0-100-560-000		ZENER,5.6V
	87-020-511-010		ZENER,05AZ4.7V
	S0-100-821-200		ZENER,8.2V,1/2W
	S3-MTZ-J91-BM0		ZENER,9.1V
	S0-254-010-000		DIODE,1N5401BL
	S0-100-680-010		ZENER,6.8V MTZJ6.8B
TUNER C.B			
C109	87-010-380-010		CAP,E 47-16V
C120	87-015-975-010		CAP,E 220-6.3V
C121	87-010-075-040		CAP,E 10-16V
C126	87-010-221-010		CAP,E 470-10V
C129	87-010-071-040		CAP,E 1-50V
C130	87-010-071-040		CAP,E 1-50V
C135	87-010-074-080		CAP,E 4.7-35V
C137	87-010-074-080		CAP,E 4.7-35V
C141	87-015-975-010		CAP,E 220-6.3V
C142	87-010-074-080		CAP,E 4.7-35V
C148	87-010-380-010		CAP,E 47-16V
C168	87-010-071-040		CAP,E 1-50V
C282	87-010-079-010		CAP,E 100-6.3V
C288	87-010-075-040		CAP,E 10-16V
CF1	S0-001-070-010		CER,FILTER
CF2	S0-001-070-010		CER,FILTER
CF102	S6-010-700-010		CER,RESO CDA10.7MG43-A
CF103	S6-004-560-050		CER,RESO CSB456F29
CON2	S0-401-540-000		SPKR,TERMINAL 4P
CON102	S0-524-180-900		B-B HEADER 9PI
FE1	A8-8ZA-191-030		TUNER FM 8ZA-1
IFT101	87-A90-245-010		IFT,CFAZH-450
IFT105	S7-NF8-020-240		IFT,AM PACK 4 455BFR-121
L101	87-003-098-080		INDUCTOR,2.2UH
L112	87-003-147-010		COIL,22UH
L113	87-005-196-080		INDUCTOR,10UH
L281	87-005-696-080		INDUCTOR,100UH
PT281	S1-667-260-000		PT,EL EI-16
SFR101	S1-030-850-000		SFR,10K
X101	S6-072-000-000		X'TAL 7.2 MHz
POWER C.B			
C807	87-010-404-010		CAP,E 4.7-50V
C808	87-010-404-010		CAP,E 4.7-50V
C815	87-010-546-080		CAP,E 0.33-50V
C816	87-010-546-080		CAP,E 0.33-50V
C819	87-010-038-010		CAP,E 22-25V
C821	87-010-380-010		CAP,E 47-16V
C822	87-010-263-080		ELECT CAP 100-10V
C824	87-A10-189-080		CAP,E 220-10V
C825	87-010-545-010		CAP,E 0.22-50V
C826	87-010-545-010		CAP,E 0.22-50V
C835	87-010-380-010		CAP,E 47-16V
C837	87-010-404-010		CAP,E 4.7-50V
C838	87-010-404-010		CAP,E 4.7-50V
C839	87-010-404-010		CAP,E 4.7-50V
C840	87-010-404-010		CAP,E 4.7-50V
C842	87-A10-189-080		CAP,E 220-10V
C843	87-010-399-090		CAP,E 3300-35V
C844	87-010-398-090		CAP,E 2200-35V
C849	87-010-249-010		CAP,E 470-16V
C850	87-A10-189-080		CAP,E 220-10V
C852	87-010-221-010		CAP,E 470-10V
C854	87-010-038-010		CAP,E 22-25V
C858	87-010-403-010		CAP,E 3.3-50V
C862	87-010-388-010		CAP,E 1000-25V
C865	87-010-237-010		CAP,E 1000-16V
⚠FR801	S0-250-100-010		FUSE,2.5A 125V
⚠FR802	S0-250-100-010		FUSE,2.5A 125V
⚠FR803	S0-250-100-010		FUSE,2.5A 125V
J801	S0-055-301-200		CONN,BOARD TO BOARD 12P
J803	S0-524-180-800		B-B HEADER 8PI
J804	S0-528-070-700		CONN,FFC 7P
J805	S0-011-171-700		CONN,SOCKET FFC 17P
AMP C.B			
C903	87-010-037-010		CAP,E 10-50V
C904	87-010-045-010		CAP,E 100-25V
C905	87-010-045-010		CAP,E 100-25V
C913	87-A10-818-040		CAP,E 100-16V
C914	87-A10-818-040		CAP,E 100-16V
C915	87-010-075-040		CAP,E 10-16V
C916	87-010-075-040		CAP,E 10-16V
C917	87-010-037-010		CAP,E 10-50V
C918	87-010-380-010		CAP,E 47-16V
C919	87-010-393-010		CAP,E 100-35V
C921	87-A10-818-040		CAP,E 100-16V
C923	87-010-045-010		CAP,E 100-25V
C924	87-A10-818-040		CAP,E 100-16V
C925	87-010-380-010		CAP,E 47-16V
C926	87-A10-818-040		CAP,E 100-16V
C927	87-010-494-010		CAP,E 1-50V
J908	S0-401-400-000		CONN,PIN 4P
M1	S0-611-190-000		MOTOR,FF-050SH-11190
M2	S1-000-900-090		COOLING FAN
R956	S2-054-100-010		THERMISTOR T5D410K45JBPDA-0
DISPLAY C.B			
BL201	S0-904-100-000		EL BACKLIGHT 114-36
C204	87-010-782-010		CAP,E 47000-5.5V

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C205	87-010-079-010		CAP,E 100-6.3V
C207	87-010-071-040		CAP,E 1-50V
C208	87-010-071-040		CAP,E 1-50V
FC3	S0-702-501-000		FFC CABLE 7P 250MM
FC4	S0-701-801-000		FFC CABLE 7P 180MM
H201	S0-532-900-900		B-B RECEPTACLE 9P
H202	S0-528-060-700		CONN,FFC 7P
H203	S0-532-900-800		B-B RECEPTACLE 8P
H204	S0-528-060-700		CONN,FFC 7P
J201	S0-035-183-500		HP,JACK ST 3.5MM
L201	87-003-097-010		COIL,1UH
LCD201	S0-041-380-000		LCD DISPLAY
SW201	SK-HH9-010-000		SW,TACT KSM0612A
SW202	SK-HH9-010-000		SW,TACT KSM0612A
SW203	SK-HH9-010-000		SW,TACT KSM0612A
SW204	SK-HH9-010-000		SW,TACT KSM0612A
SW205	S0-000-010-010		SW,MIRCO MLS-1
X201	S3-327-680-000		X,TAL 32.768KHZ
X202	S0-008-000-000		CER,RESO 8 MHZ
KEY C.B			
H301	S0-528-070-700		CONN,FFC 7P
SW302	SK-HH9-010-000		SW,TACT KSM0612A
SW310	SK-HH9-010-000		SW,TACT KSM0612A
SW311	SK-HH9-010-000		SW,TACT KSM0612A
SW312	SK-HH9-010-000		SW,TACT KSM0612A
SW313	SK-HH9-010-000		SW,TACT KSM0612A
SW314	SK-HH9-010-000		SW,TACT KSM0612A
SW315	SK-HH9-010-000		SW,TACT KSM0612A
SW316	SK-HH9-010-000		SW,TACT KSM0612A
SW317	SK-HH9-010-000		SW,TACT KSM0612A
SW318	SK-HH9-010-000		SW,TACT KSM0612A
SW351	SH-132-032-000		ROTARY ENCORDER
SPEAKER C.B			
J603	S0-202-130-000		JACK,PIN 3P
PT C.B			
J604	S0-702-000-000		CONN,PIN 7P
J614	S0-532-650-200		HEADER MOLEX 2P
⚠PT801	S5-166-360-200		POWER TF EI-66/36 120V
FUSE C.B			
⚠	S4-000-010-000		AC CONTACT TERMINAL
⚠	S7-900-000-000		FUSE HOLDER
⚠F901	S0-250-100-010		FUSE,2.5A 125V
CD MAIN C.B			
C507	87-010-404-010		CAP,E 4.7-50V
C508	87-010-404-010		CAP,E 4.7-50V
C518	87-010-037-010		CAP,E 10-50V
C521	87-010-263-080		ELECT CAP 100-10V
C523	87-010-263-080		ELECT CAP 100-10V
C527	87-010-221-010		CAP,E 470-10V
C533	87-010-263-080		ELECT CAP 100-10V
C540	87-010-380-010		CAP,E 47-16V
C541	87-010-037-010		CAP,E 10-50V
C547	87-010-549-010		CAP,E 47-6.3V
C549	87-010-549-010		CAP,E 47-6.3V
C555	87-010-244-040		CAP,E 22-16V
C555	87-015-716-010		CAP,E 22-16V
C556	87-010-549-010		CAP,E 47-6.3V
C558	87-010-037-010		CAP,E 10-50V
C561	87-010-406-080		ELECT CAP 22-50V
C566	87-010-263-080		ELECT CAP 100-10V

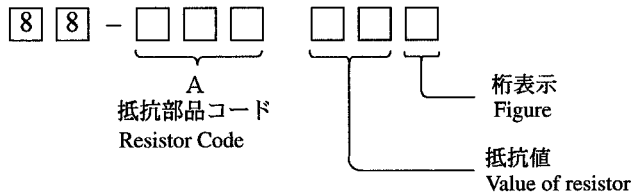
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C569	87-010-248-080		ELECT CAP 220-10V
C574	87-010-047-010		CAP,E 100-50V
C575	87-010-047-010		CAP,E 100-50V
C707	87-010-401-010		CAP,E 1-50V
C708	87-010-401-010		CAP,E 1-50V
C713	87-010-075-040		CAP,E 10-16V
C714	87-A10-189-080		CAP,E 220-10V
C727	87-010-782-010		CAP,E 47000-5.5V
C728	87-010-263-080		ELECT CAP 100-10V
C736	87-010-401-010		CAP,E 1-50V
C737	87-010-401-010		CAP,E 1-50V
C743	87-010-075-040		CAP,E 10-16V
C751	87-010-401-010		CAP,E 1-50V
C752	87-010-401-010		CAP,E 1-50V
C755	87-015-716-010		CAP,E 22-16V
C761	87-010-075-040		CAP,E 10-16V
C770	87-010-401-010		CAP,E 1-50V
C771	87-010-401-010		CAP,E 1-50V
C772	87-010-075-040		CAP,E 10-16V
CON701	S0-524-181-200		B-B HEADER 12P
CON702	S1-78C-L12-010		CONN-PLUG FC SMK 17P
FC1	S1-401-201-000		FFC CABLE 14P 120MM
FC2	S0-801-201-000		FFC CABLE 8P 120MM
H501	S0-000-151-510		CONN,SNAP-IN 15P
H502	S0-000-020-210		HEADER JST 2P
H503	S0-000-020-220		HEADER JST 2P(RED)
H504	S0-000-020-230		HEADER JST 2P(BLU)
H703	S0-000-020-230		HEADER JST 2P(BLU)
L501	87-005-696-080		INDUCTOR,100UH
L502	S0-035-341-000		COIL,BEAD 100MHZ
L503	S0-035-341-000		COIL,BEAD 100MHZ
M701	S1-215-370-000		MOTOR RF-370CA-15370 12V
RN701	S2-291-030-000		RES,NETWORK EXB-Z9E103J
RN702	S2-291-030-000		RES,NETWORK EXB-Z9E103J
SW701	S0-000-020-000		SW,MICRO MQS-2
SW702	S0-000-020-000		SW,MICRO MQS-2
VR501	87-024-171-080		SFR,5K
VR502	87-024-176-080		SFR,100K
VR503	87-024-176-080		SFR,100K
VR504	87-024-176-080		SFR,100K
X501	S0-016-930-000		CER,RESO
X701	S3-327-680-000		X,TAL 32.768KHZ
X703	S0-008-000-000		CER,RESO 8 MHZ
FUNCTION C.B			
C401	87-010-401-010		CAP,E 1-50V
C402	87-010-401-010		CAP,E 1-50V
C407	87-010-401-010		CAP,E 1-50V
C408	87-010-401-010		CAP,E 1-50V
C411	87-A10-818-040		CAP,E 100-16V
C412	87-A10-818-040		CAP,E 100-16V
C413	87-010-075-040		CAP,E 10-16V
C414	87-010-075-040		CAP,E 10-16V
C415	87-010-401-010		CAP,E 1-50V
C416	87-010-401-010		CAP,E 1-50V
CON401	S0-532-901-200		B-B RECEPTACLE 12P
J401	S0-202-460-010		JACK,PIN 3Px2
PANEL C.B			
C601	87-010-053-810		CAP,E 1-50V
H705	S2-001-WR0-700		HEADER 7P
REM601	S0-006-380-000		RC,PHOTO RECEIVER
SW601	SK-HH9-010-000		SW,TACT KSM0612A
SW602	SK-HH9-010-000		SW,TACT KSM0612A
SW603	SK-HH9-010-000		SW,TACT KSM0612A
SW604	SK-HH9-010-000		SW,TACT KSM0612A
SW605	SK-HH9-010-000		SW,TACT KSM0612A
SW607	SK-HH9-130-000		SW,PB(CSDSR510,515)

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
OPTICAL C.B			
C801	87-010-263-080		ELECT CAP 100-10V
LED801	87-A40-123-010		LED,SLZ-8128A-01-B

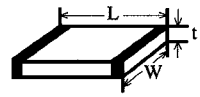
- コネクタについては、初回発注の扱いとはせず、受注後に業者へ発注し、供給致します。
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

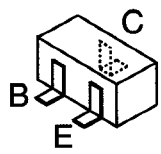
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

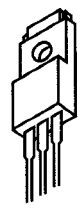


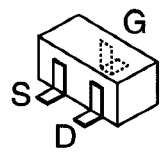
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



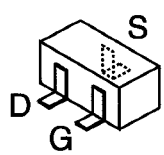




2SA1162 DTA114YK
2SC2712 DTC114TK/TKA
2SC2714 DTC114YK

2SB1370

2SK209

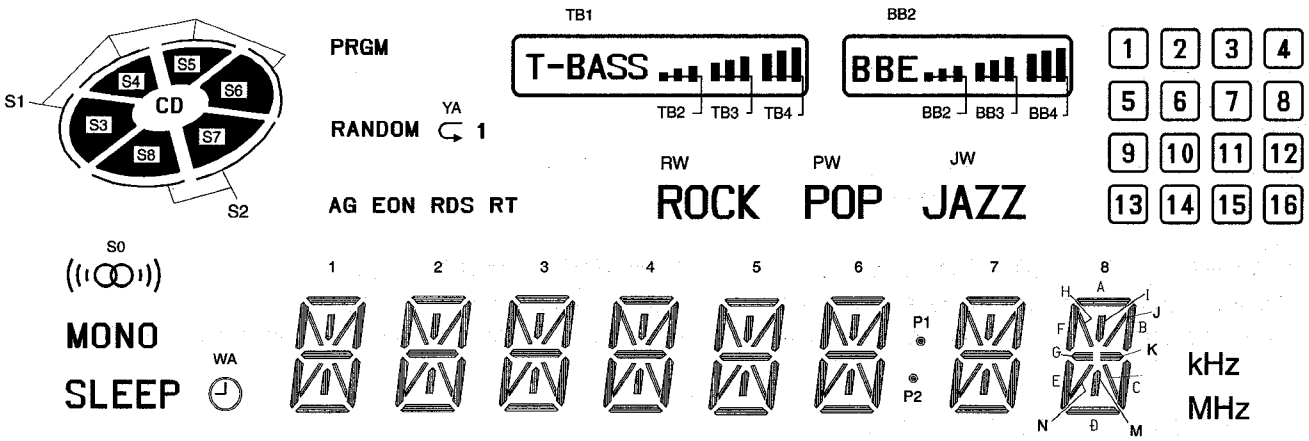


2SK211

PE8050
PE8550

DTC114ES
DTC124ES

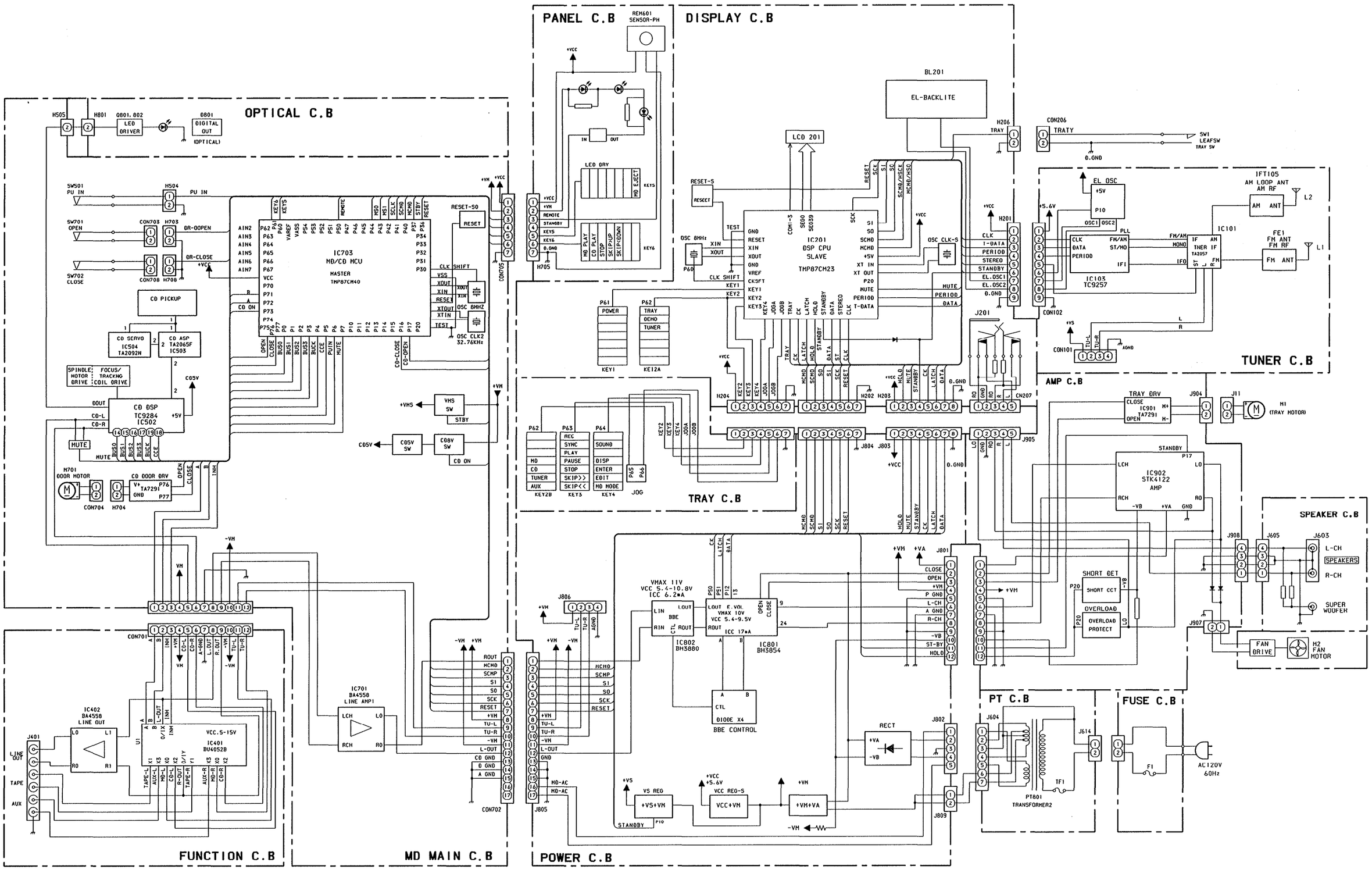
LCD DISPLAY



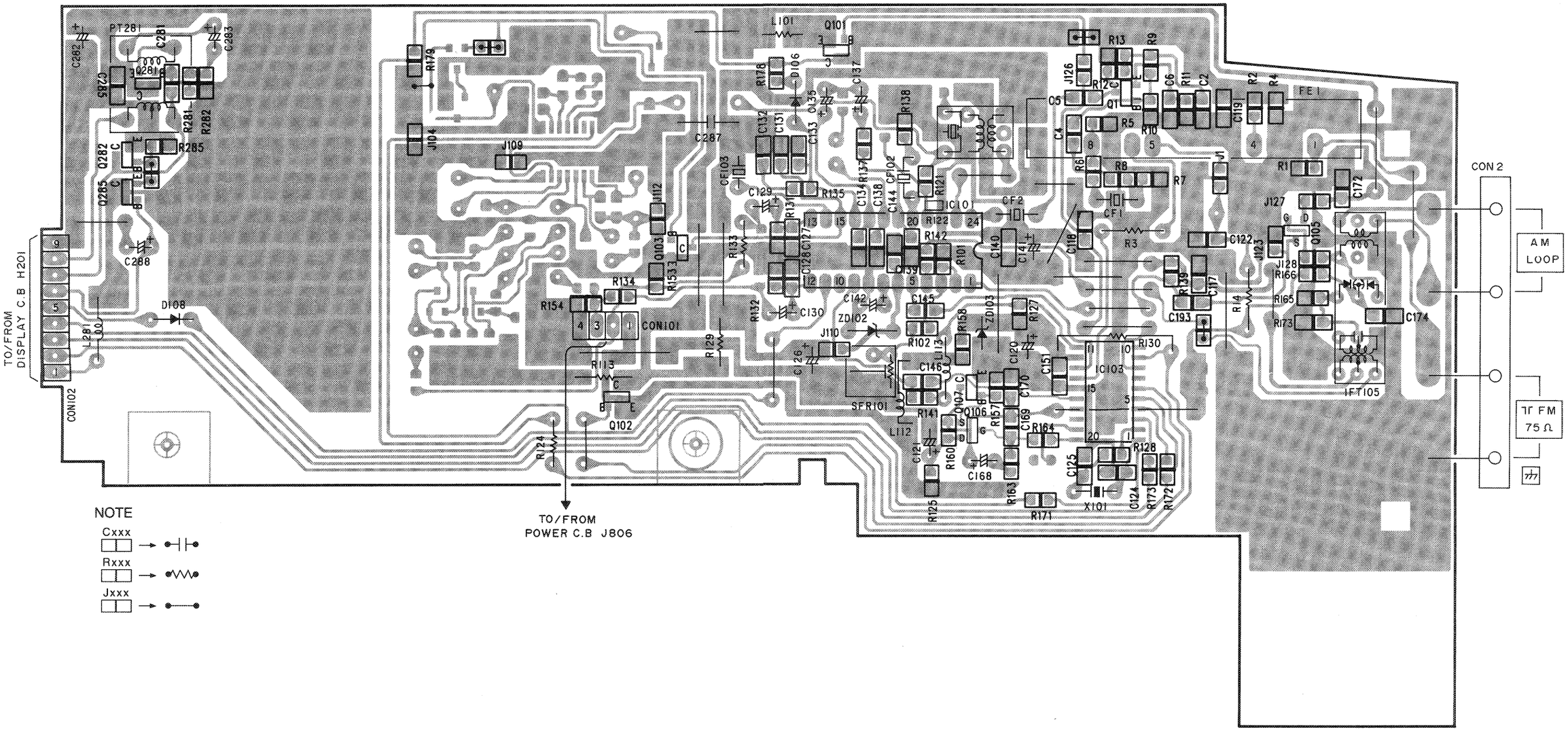
NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
COMO	COMO	--	--	--	S1	S5	S6	PRGM	EON	1A	RDS	RT	YA	2A	1	TB1	TB2	3A	TB3	TB4	ROCK	A4
COM1	--	COM1	--	--	S4	CD	S7	RANDOM	1F	1H	1J	1B	2F	2H	2J	2B	3F	3H	3J	3B	4F	4H
COM2	--	--	COM2	--	S3	S8	S2	AG	1G	1IM	1L	1K	2G	2IM	2L	2K	3G	3IM	3L	3K	4G	4IM
COM3	--	--	--	COM3	S0	MONO	SLEEP	WA	1E	1N	1D	1C	2E	2N	2D	2C	3E	3N	3D	3C	4E	4N

NO	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	30	41	42	43	44
COMO	POP	JAZZ	JW	5A	PW	RW	--	6A	P1	P2	BB2	7A	BB3	BB4	BB1	8A	kHz	MHz	16	15	14	13
COM1	4J	4B	5F	5H	5J	5B	6F	6H	6J	6B	7F	7H	7J	7B	8F	8H	8J	8B	12	11	10	9
COM2	4L	4K	5G	5IM	5L	5K	6G	6IM	6L	6K	7G	7IM	7L	7K	8G	8IM	8L	8LK	8	7	6	5
COM3	4D	4C	5E	5N	5D	5C	6E	6N	6D	6C	7E	7N	7D	7C	8E	8N	8D	8C	4	3	2	1

BLOCK DIAGRAM



TUNER C.B (PATTERN SIDE)



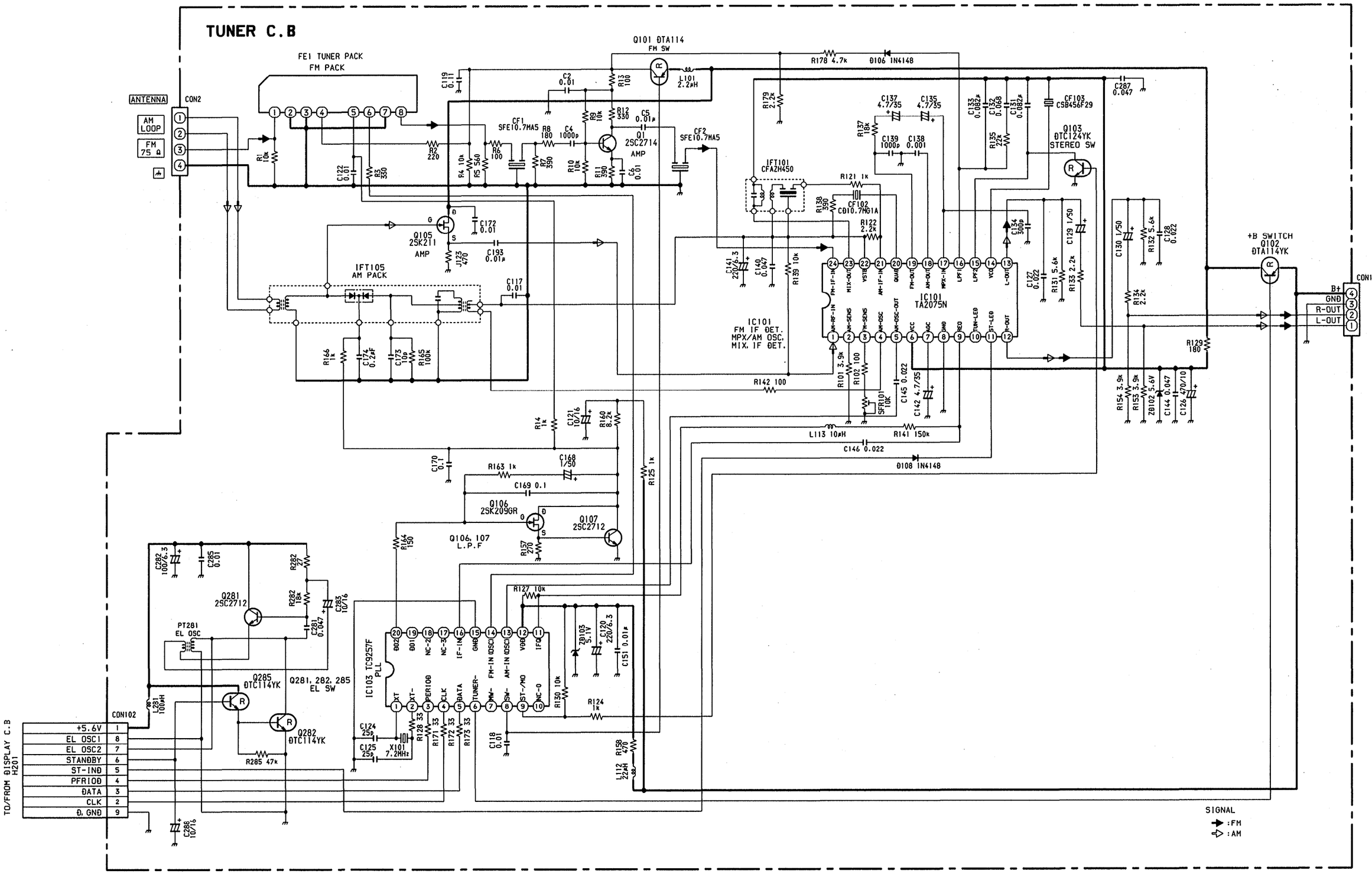
NOTE

Cxxx →

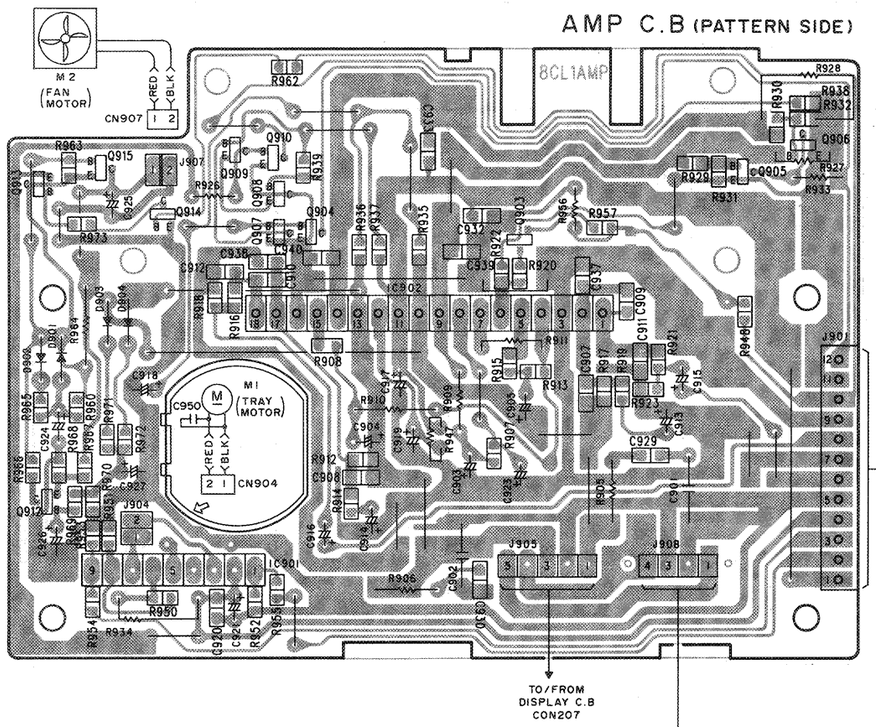
Rxxx →

Jxxx →

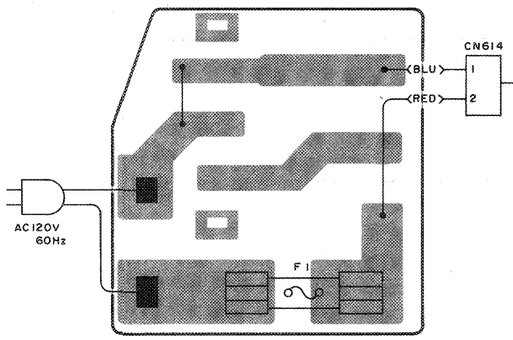
SCHEMATIC DIAGRAM-1 (TUNER)



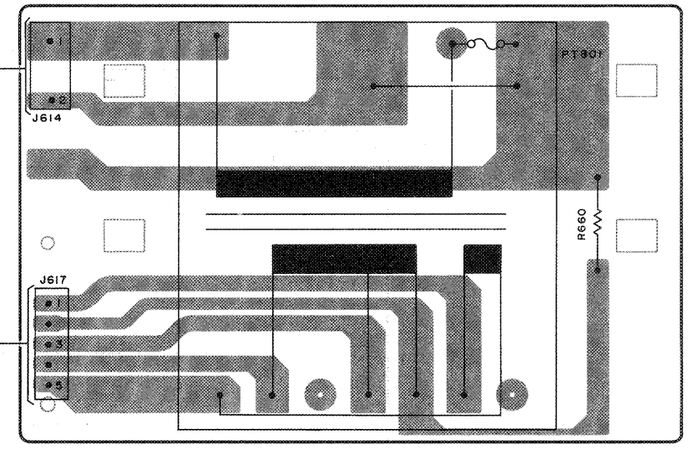
AMP C.B (PATTERN SIDE)



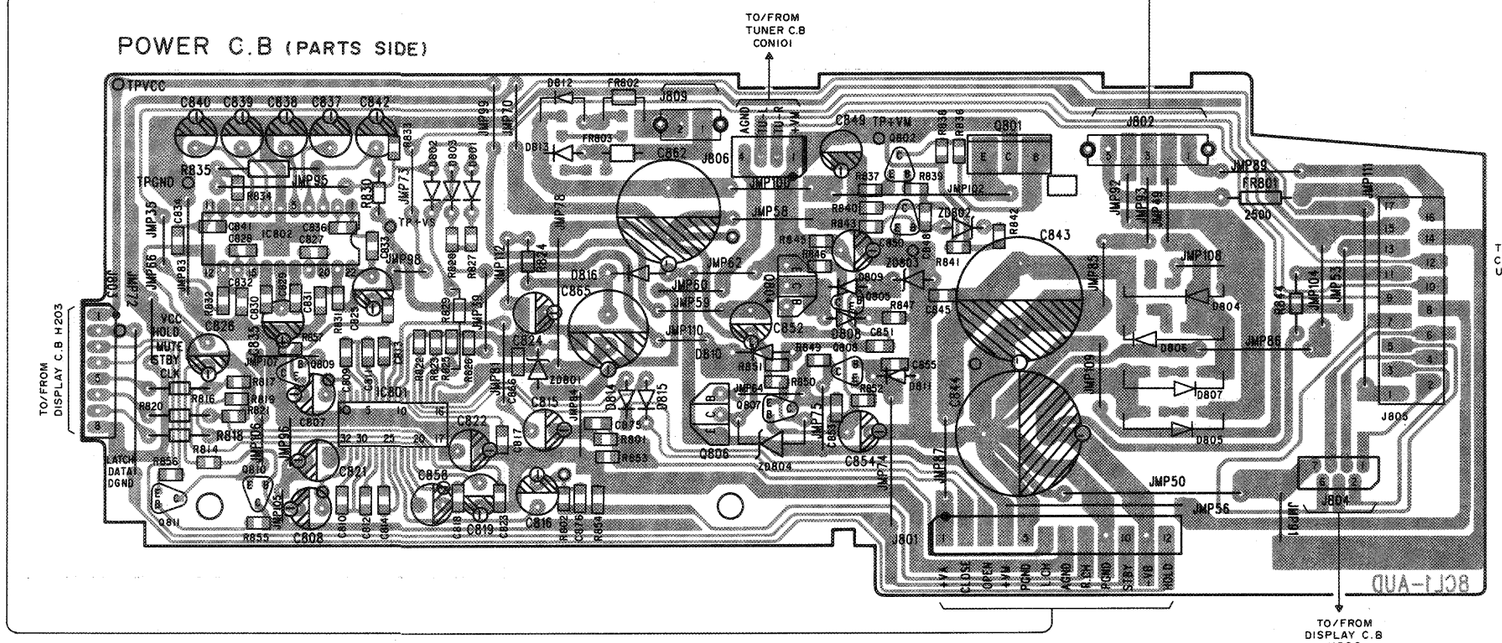
FUSE C.B (PATTERN SIDE)



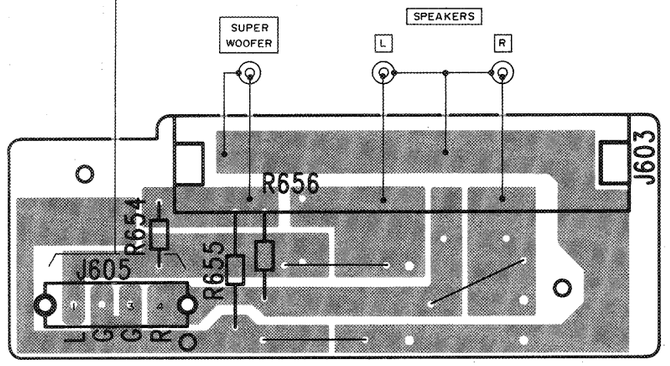
PT C.B (PATTERN SIDE)



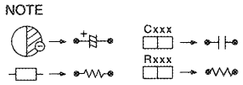
POWER C.B (PARTS SIDE)



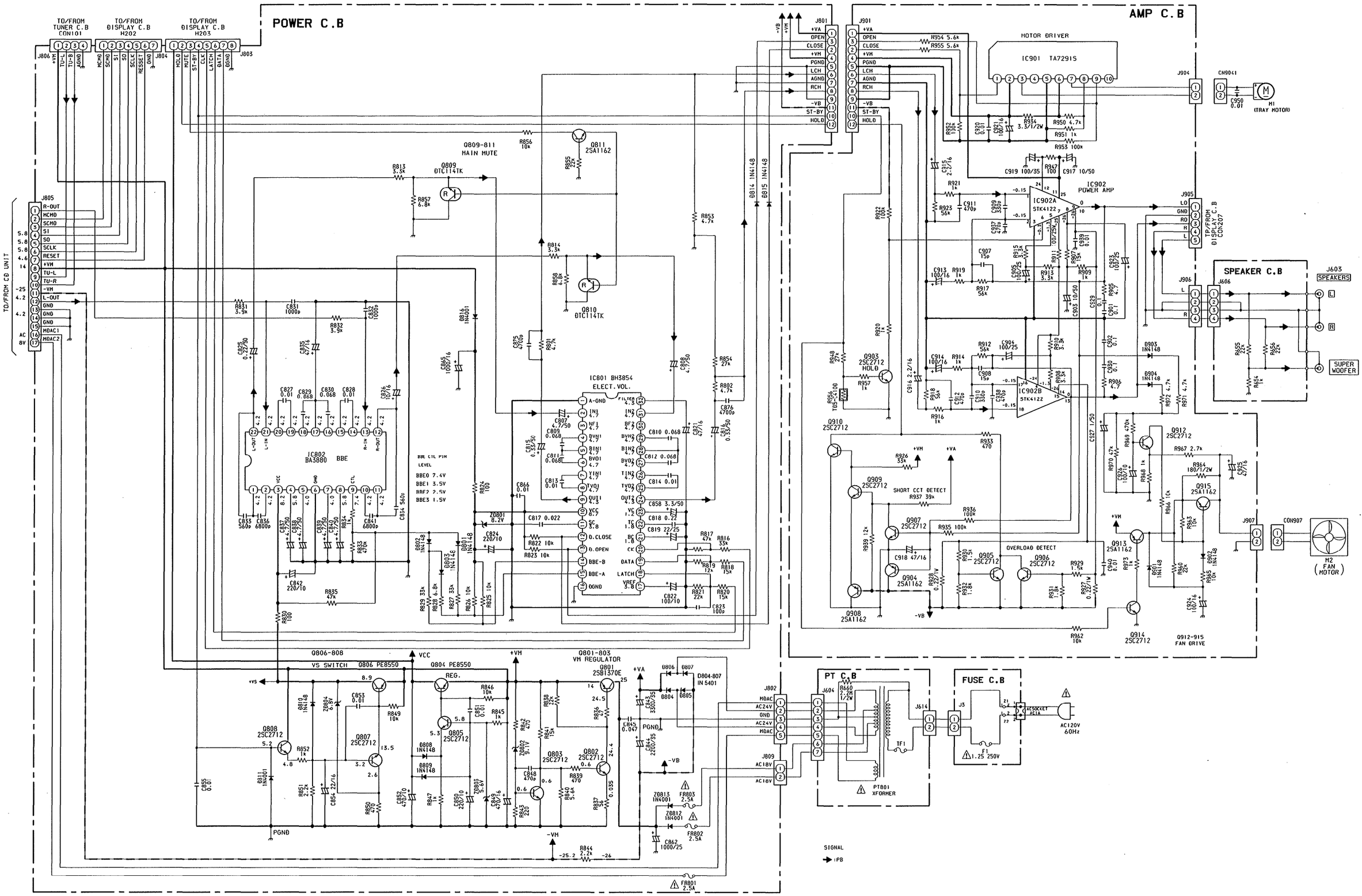
SPEAKER C.B (PARTS SIDE)



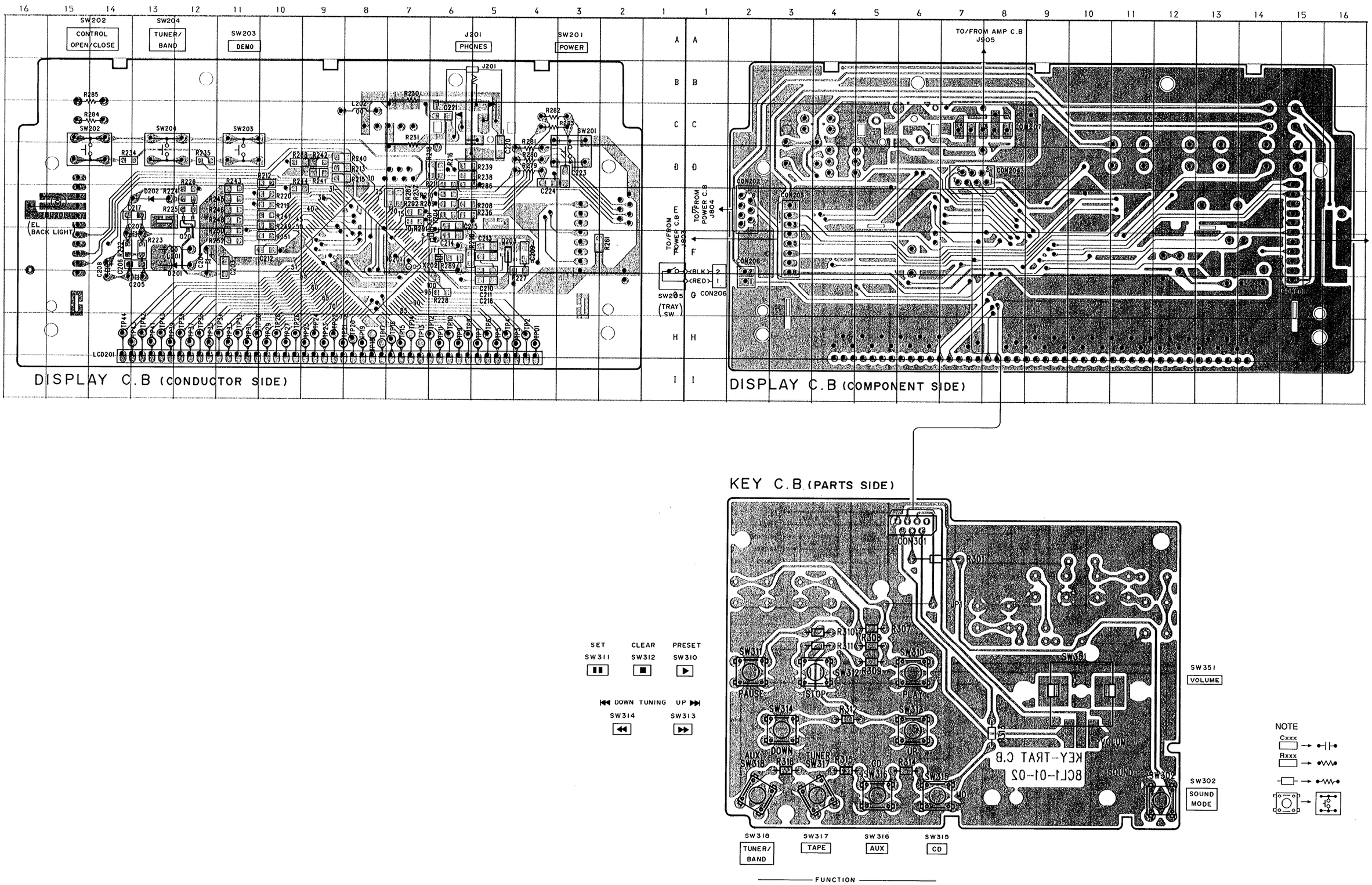
NOTE



SCHEMATIC DIAGRAM-2 (AMP/POWER)



WIRING-3 (DISPLAY)



SCHEMATIC DIAGRAM-3 (DISPLAY)

DISPLAY C.B

LCD201

IC201
TMP87CM23F
SYSTEM CONTROL

SW201 POWER
SW202 TRAY
SW203 DEMO
SW204 BAND

R231 390 1/4W
R230 390 1/4W
J201 PHONES
C1 0.1

CON207
TO/FROM AMP C.B J905

SW351 VOLUME

H204
CON301
DGND
JOGB
JOGA
KEY4
KEY3
KEY2
+VCC

SW302 SOUND MODE
SW310
SW311
SW312
SW313
SW314
SW201 CD
SW202 AUX
SW203 TAPE
SW204 TUNER/BAND

KEY C.B

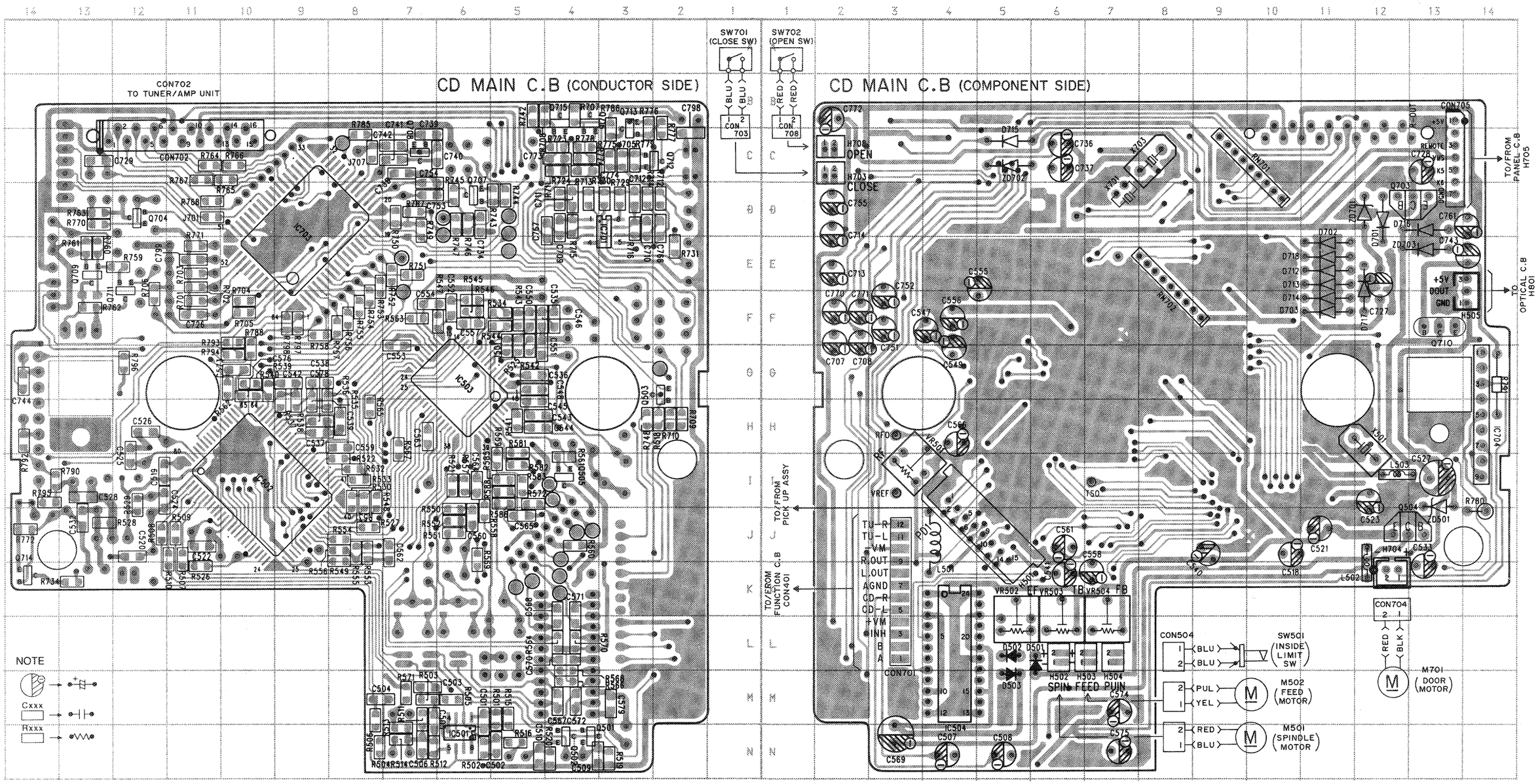
H202 TO/FROM POWER C.B J804
H206
H203 TO/FROM POWER C.B J803
H201 TO/FROM TUNER C.B CON102

SW205 (TRAY SW)

BL201 EL BACK LIGHT

Q203 2SC2712 GR CLK SHIFT
Q204 2SC2712 GR RESET

X201 32.768MHz
X202 8MHz

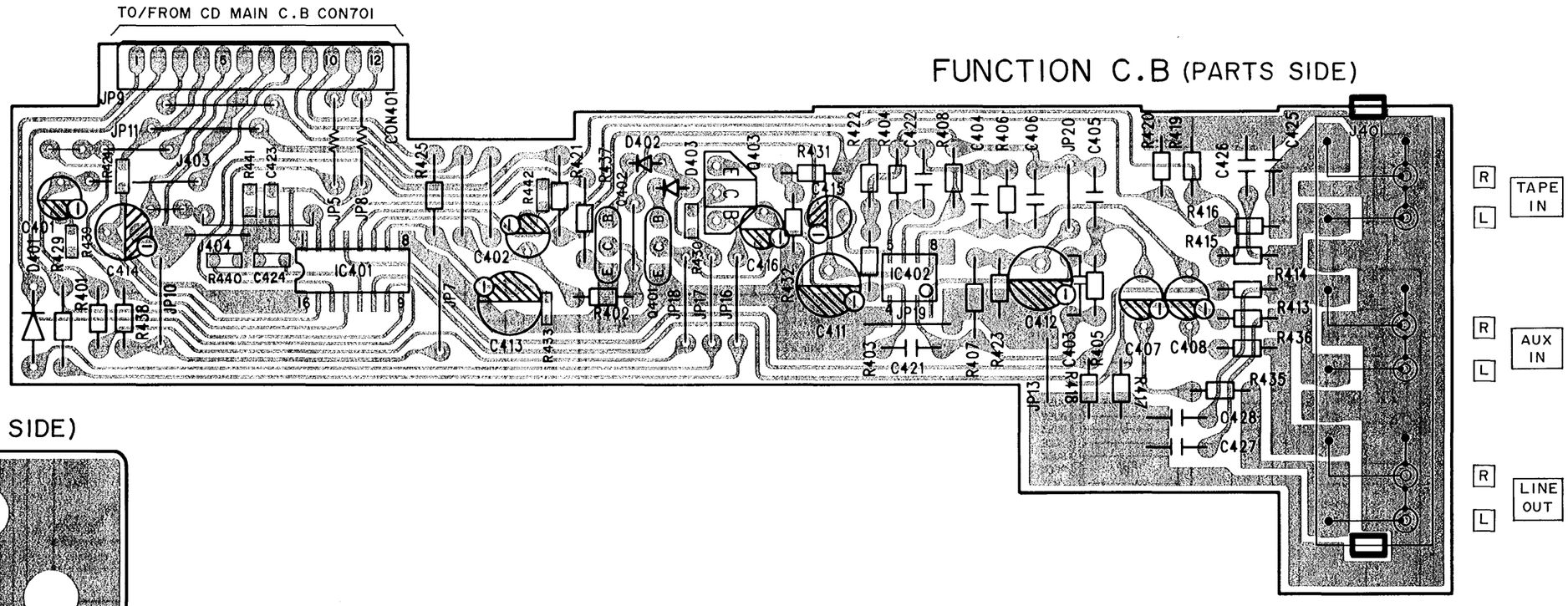

CD MAIN C.B (CONDUCTOR SIDE)
CD MAIN C.B (COMPONENT SIDE)
CON702
TO TUNER/AMP UNIT
SW701
(CLOSE SW)
SW702
(OPEN SW)
CON703
CON708
H708
OPEN
H703
CLOSE
CON705
TO/FROM
PANEL C.B
H705
TO
OPTICAL C.B
H801
TO/FROM
PICK UP ASSY
TO/FROM
FUNCTION C.B
CON401
CON701
CON504
SW501
(INSIDE
LIMIT
SW)
M502
FEED
(MOTOR)
M501
(SPINDLE
MOTOR)
CON704
M701
(DOOR
MOTOR)
SPIN
FEED
PUIN
NOTE
Cxxx
Rxxx

SCHEMATIC DIAGRAM-4 (CD MAIN)

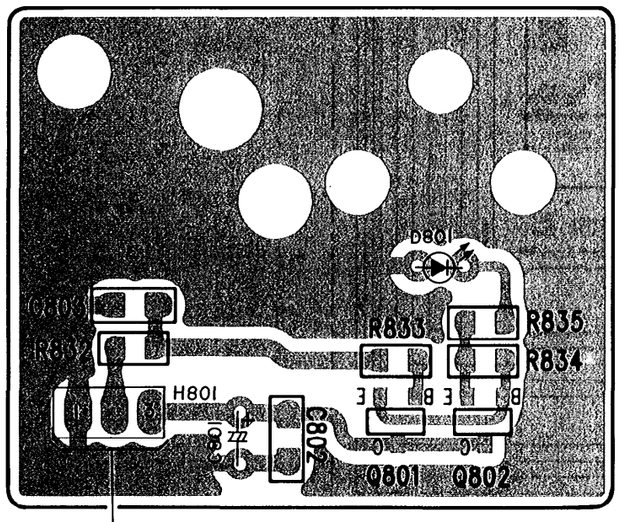
CD MAIN C.B (1/2)

IC501 AMP
IC501A BA4558
IC501B BA4558
IC502 TC9284BF DIGITAL SIGNAL PROCESSOR
IC503 TA2065F RF AMP ANALOG SIGNAL PROCESSOR
IC504 TA2092N SPIN FEED FOCUS TRACK MORTOR, COIL DRIVER
Q501 BTC114TK
Q502 BTC114TK
Q501-503 MUTE
Q503 2SA1162
Q504 PE8050
Q505 2SA1162 APC
REG.
X501 16.9344MHz
L501 100μH
L502 COIL BEAD
L503 COIL BEAD
D501 1N4001
D502 1N4001
D503 1N4001
Z0501 5.6V
VR501 5K RF ADJ
VR502 EF ADJ
VR502 100K
VR503 100K TRACKING OFFSET ADJ
VR504 FOCUS OFFSET ADJ
H501
H502
H503
H504
CD MECHANISM (1/2) KSH-542
PDIC
PD
LD
SHORT LAND
TRACKING COIL
FOCUS COIL
CD MECHANISM (2/2) KMS-542
SW501 (INSIDE LIMIT SWITCH)
M502 (SLED MORTOR)
M501 (SPINDLE MORTOR)
TO/FROM CD MAIN C.B (2/2)
SIGNAL
:ANALOG PB
:DIGITAL PB

FUNCTION C.B (PARTS SIDE)



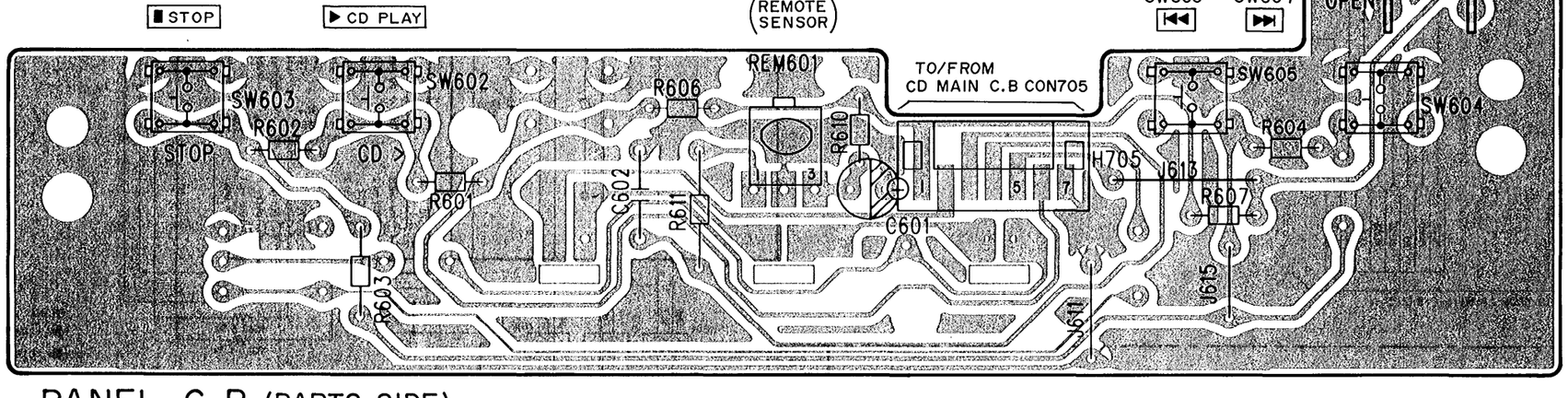
OPTICAL C.B (PATTERN SIDE)



D801
CD DIGITAL OUT
(OPTICAL)

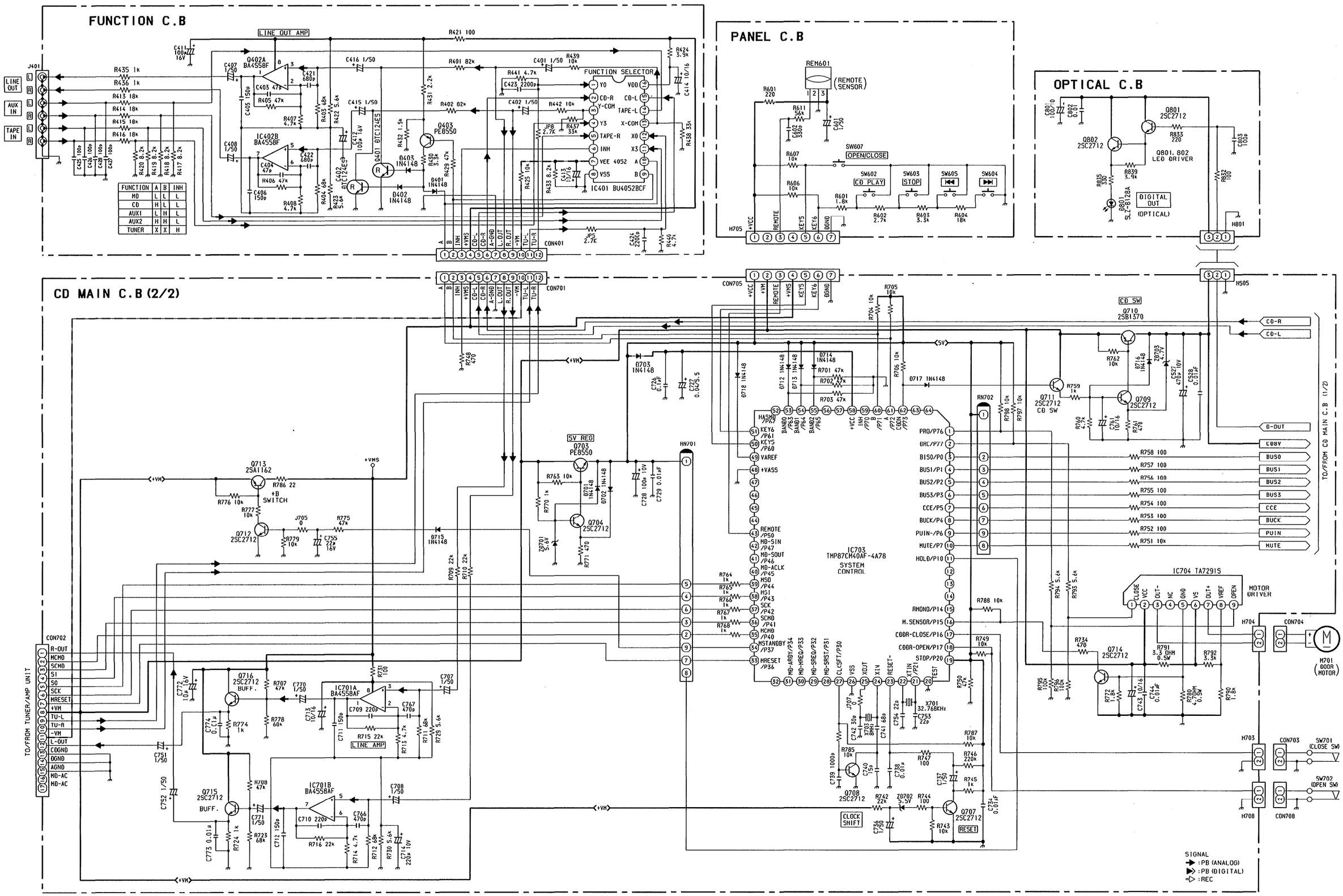
FROM
CD MAIN C.B
H505

PANEL C.B (PARTS SIDE)



NOTE

SCHEMATIC DIAGRAM-5 (FUNCTION/PANEL)



TUNER SECTION
TEST CONDITION: SET AM/FM TUNER ON ONE FREQUENCY

IC101

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
AM	2.00	0.48	0	2.01	5.31	5.59	0.02	0	0.01	0.21	5.33	1.60
FM	1.99	0.48	0	2.00	5.57	5.57	1.11	0	0.07	0	5.33	1.61
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
AM	1.55	5.07	4.16	1.54	1.38	1.55	1.56	1.69	2.02	2.02	5.59	2.02
FM	1.55	5.05	0	4.23	1.39	0.25	1.64	1.16	1.99	1.99	5.57	1.99

IC104

PIN'S NUMBER	1	2	3	4	5	6	7	8
AM	0.15	1.43	0.54	0.71	0.72	4.99	5.55	0
PIN'S NUMBER	9	10	11	12	13	14	15	16
AM	5.56	5.34	0.09	5.56	0.66	0.02	5.08	5.06

IC103

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
AM	2.53	2.71	0	5.14	0	0.07	0	10.44	0	0
FM	2.48	2.66	5.14	0	0	0.07	0	0	2.22	0
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
AM	0	5.11	0	0	0	2.62	0.54	0.53	0.44	0.56
FM	0	5.02	0	2.54	0	2.57	0.54	0.54	0.45	0.50

AUDIO & POWER SECTION

IC801

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.30	8.70	3.80	/
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	/	/	/	0	3.80	/	/	/	1.80	1.80	1.20	4.30
PIN'S NUMBER	26	27	28	29	30	31	32					
	4.70	4.70	4.70	4.70	4.70	4.70	4.30					

IC802

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11
BBE0	4.20	4.20	8.20	5.80	4.00	0	4.00	5.80	7.40	4.20	4.20
BBE1	4.20	4.20	8.20	5.80	4.00	0	4.00	5.80	3.50	4.20	4.20
BBE2	4.20	4.20	8.20	5.80	4.00	0	4.00	5.80	2.50	4.20	4.20
BBE3	4.20	4.20	8.20	5.80	4.00	0	4.00	5.80	1.50	4.20	4.20
PIN'S NUMBER	12	13	14	15	16	17	18	19	20	21	22
BBE0	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
BBE1	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
BBE2	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
BBE3	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20

IC901

PIN'S NUMBER	1	2	3	4	5	6	7	8	9
OPEN	0	10.74	0.15	0	0	10.73	0.29	1.86	0
CLOSE	0	10.74	0.08	0	0	10.73	0.29	1.86	0

IC902

PIN'S NUMBER	1	2	3	4	5	6	7	8	9
	-0.15	-0.15	-0.30	-24	-1.30	-0.30	-25.0	-26.0	-26.0
PIN'S NUMBER	10	11	12	13	14	15	16	17	18
	0	25.0	24.0	0	-26.0	-1.30	0	-0.15	-0.15

	Q801			Q802			Q803			Q804		
	E	C	B	E	C	B	E	C	B	E	C	B
	25.0	14.0	24.5	0.035	24.4	0.60	0	0.60	0.60	14.00	5.90	13.56

	Q805			Q806			Q807			Q808		
	E	C	B	E	C	B	E	C	B	E	C	B
	5.30	13.5	5.80	14.0	8.90	13.50	7.60	13.50	3.20	4.60	14.0	5.20

CD CONTROL SETCTION
TEST CONDITION: CD PLAY

IC401

PIN'S NUMBER	1	2	3	4	5	6	7	8
MD	0	0	0	0	0	0.08	-11.74	0
CD	0	0	0	0	0	0.05	-11.72	0
TAPE	0	0	0	0	0	0.00	-11.57	0
AUX	0	0	0	0	0	0.06	-11.59	0
TUNER	0	0	0	0	0	4.98	-11.64	0
PIN'S NUMBER	9	10	11	12	13	14	15	16
MD	0.08	0.11	0	0	0	0	0	10.31
CD	4.98	0.05	0	0	0	0	0	8.39
TAPE	0	4.98	0	0	0	0	0	8.39
AUX	4.98	4.98	0	0	0	0	0	7.86
TUNER	0.07	0.10	0	0	0	0	0	8.40

IC402

PIN'S NUMBER	1	2	3	4	5	6	7	8
	4.95	4.89	4.83	0	4.82	4.89	4.94	9.74

IC701

PIN'S NUMBER	1	2	3	4	5	6	7	8
	5.01	4.99	4.95	0	4.95	4.99	5.01	10.01

IC703

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	5.53	4.95	5.52	0.33
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	5.50	4.97	4.97	5.52	5.52	5.52	5.68	0	2.06	2.46	5.24	2.15
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	2.31	0	3.16	4.12	4.13	1.54	2.41	0.52	2.50	4.86	0.56	5.59
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	5.63	5.59	5.59	3.54	0.16	5.17	5.38	0.47	0.46	0.46	0	0
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
	0	5.52	0	0	0	5.19	0.04	4.62	4.43	4.96	0.08	0.08
PIN'S NUMBER	61	62	63	64								
	0.11	0.07	0	0.05								

IC704

PIN'S NUMBER	1	2	3	4	5	6	7	8	9
CLOSE	0.04	10.71	0.11	0	0.02	10.70	0.09	3.71	0.04
OPEN	0.04	10.71	0.16	0	0.02	10.70	0.10	3.71	0.04

CD SECTION
TEST CONDITION: CD PLAY
IC502

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0	2.50	2.71	4.84	2.72	2.49	0	/	/	/	/	4.84
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	0	4.46	4.52	0	0	4.32	4.67	/	4.84	/	/	/
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	4.85	0	2.21	2.06	2.06	2.06	1.99	2.06	1.68	2.06	4.82	1.78
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	4.81	2.06	2.06	2.20	4.12	4.82	2.42	2.42	2.08	2.06	2.08	2.06
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
	2.06	2.32	2.33	2.06	2.03	0	2.35	/	2.35	4.86	4.86	2.07
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70	71	72
	2.02	0	0	1.17	0	/	0	/	/	/	/	/
PIN'S NUMBER	73	74	75	76	77	78	79	80				
	/	/	/	/	/	1.74	0	0				

IC503

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	2.16	2.05	2.06	4.11	2.32	2.32	2.32	2.05	2.05	2.11	2.08	1.97
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	2.06	2.08	2.08	2.18	2.17	2.43	0	4.85	4.83	2.08	2.08	2.15
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	2.11	2.03	2.05	2.06	1.98	2.06	2.06	2.07	2.06	2.06	2.07	2.06
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	2.06	2.07	1.76	2.03	2.01	1.69	1.77	2.04	3.71	0.18	2.06	2.11

IC504

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0	2.96	7.26	3.69	2.18	2.06	3.34	2.02	3.26	7.25	3.44	0
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	0	3.02	7.23	3.66	2.17	0	7.25	2.06	3.31	7.28	3.36	0

IC501

PIN'S NUMBER	1	2	3	4	5	6	7	8
	4.72	4.32	4.29	0.02	4.29	4.31	4.72	6.97

TEST MODE

1. CD Test Mode

1-1. How to Start Up the CD Test Mode

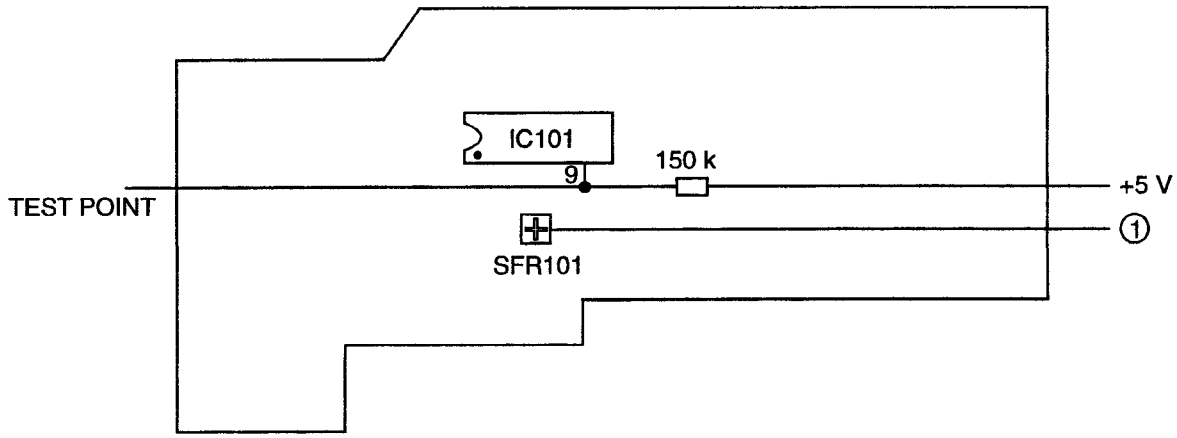
While pressing the "CD PLAY" button, connect the AC plug to the power outlet.
When the CD test mode is started up, the message "CD TEST" is displayed.
Then press the "CONTROL OPEN/CLOSE" button to open the CONTROL TRAY.

1-2. Function Description of the Test Mode

MODE	Operation	Indication on display	Function	Contents
Start mode	Starting up the test mode	CD TEST		
Search mode	■	CD	Continuous focus searching. The pickup lens repeats the full-swing up-down motion * Note	Check AC circuit. Laser current measurement. Focus error waveform check.
Play mode	▶	Track No. and playing time are displayed	Normal playback. When the TOC reading is not possible, the same movement as in the search mode.	Focus servo. Tracking servo. CLV servo. Sled servo.
Traverse mode	⏸	Track No. and playing time flash	Playback PAUSE mode	Tracking servo OFF.
Sled mode	▶▶ ◀◀	CD TEST	The pickup moves to the innermost track The pickup moves to the outermost track	Sled servo. Check operation of the mechanism.

Note: If the focus search operation is continued for 10 minutes or longer, heating of the driver IC is accumulated to trigger the protection circuit that will stop operation of the CD system. .Turn off the main power and re-start operation about 10 minutes later.

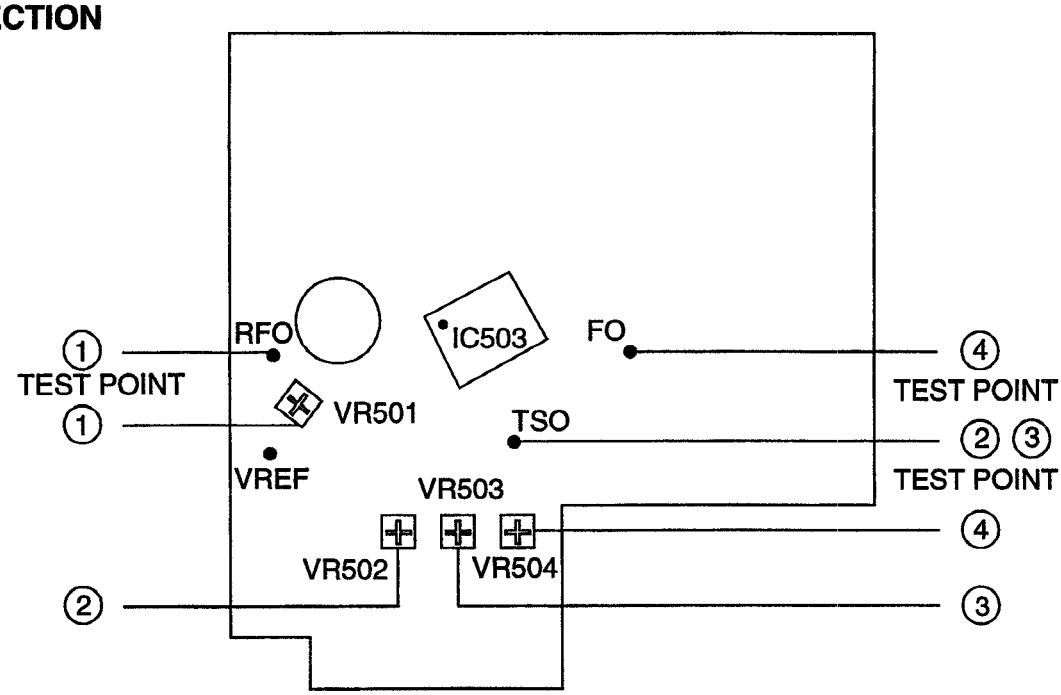
TUNER SECTION



TUNER SECTION ALIGNMENT DIAGRAM

1. FM Auto Stop Adjustment
   Test point: IC101(TA2057N) 9 PIN and GND
   Adjustment location: SFR101
   Connect a 150 k_{Ω} resistor to IC101 9 PIN and +5 V
   Connect an oscilloscope to test points
   Set 98 MHz, 25 dB input signal to FM Ant
   Adjust SFR101 so that FM IF waveform just appear
   Remove 150 k_{Ω} resistor

CD SECTION



CD SECTION ALIGNMENT DIAGRAM

1. RF Adjustment
   Test point: RFO and VREF
   1) Connect an oscilloscope to the test points
   2) Turn on the power switch
   3) Load the test disc(TCD-782) and play the NO.2
   4) Adjust VR501 so that the RF peak is maximum and waveform eye pattern is optimum
   5) Turn off power switch

2. EF Adjustment
   Test point: TSO and VREF
   1) Connect an oscilloscope to the test points
   2) Turn on the power switch
   3) Load the test disc(TCD-782) and press skip key so that EF waveform appear
   4) Adjust VR502 so that EF waveform is symmetrical
   5) Turn off power switch

3. Tracking Offset Adjustment
   Test point: TSO and VREF
   1) Connect an oscillescope to test points
   2) Turn on power switch
   3) Adjust VR503 so that level on oscilloscope is 0 mV
   4) Turn off power switch

4. Focus Offset Adjustment
   Test point: FO(IC503 11PIN) and VREF
   1) Connect an oscilloscope to the test points
   2) Turn on the power switch
   3) Adjust VR504 so that level on oscilloscope is 0 mV
   4) Turn off power switch

PRACTICAL SERVICE FIGURE

<FM SECTION>

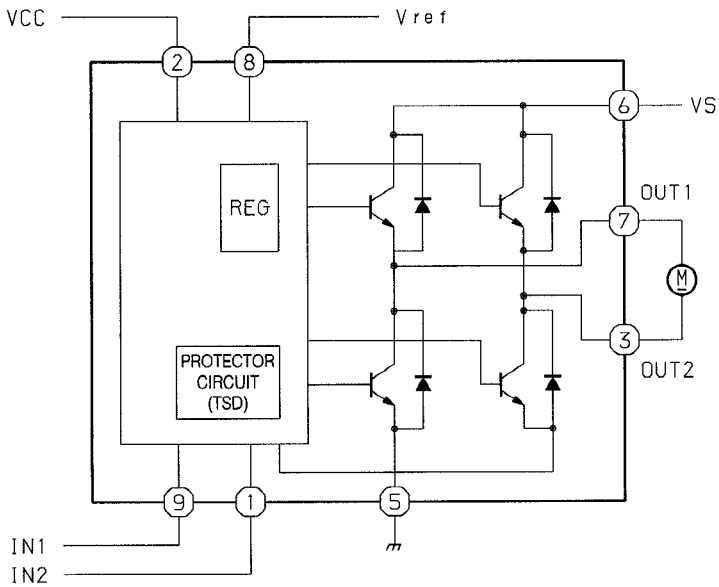
IHF Sensitiviy:	Less than 16dB (at 88.0/108.0MHz)
(THD 3%)	Less than 14dB (at 98.0MHz)
Signal to noise ratio:	More than 60dB (at 98.0MHz)
Distortion:	Less than 1.0% (at 98.0MHz)
(Input: 54dB)	
Stereo separation:	More than 24dB (at 98.0MHz)
Intermediate frequency:	10.7MHz

<AM SECTION>

Sensitivity:	Less than 64dB (at 600kHz)
(S/N 20dB)	Less than 58dB (at 1000/1400kHz)
Signal to noise ratio:	More than 30dB (at 1000kHz)
(Input: 74dB)	
Distortion:	Less than 1.5% (at 1000kHz)
Intermediate frequency:	450kHz

IC BLOCK DIAGRAM

IC, TA7291S

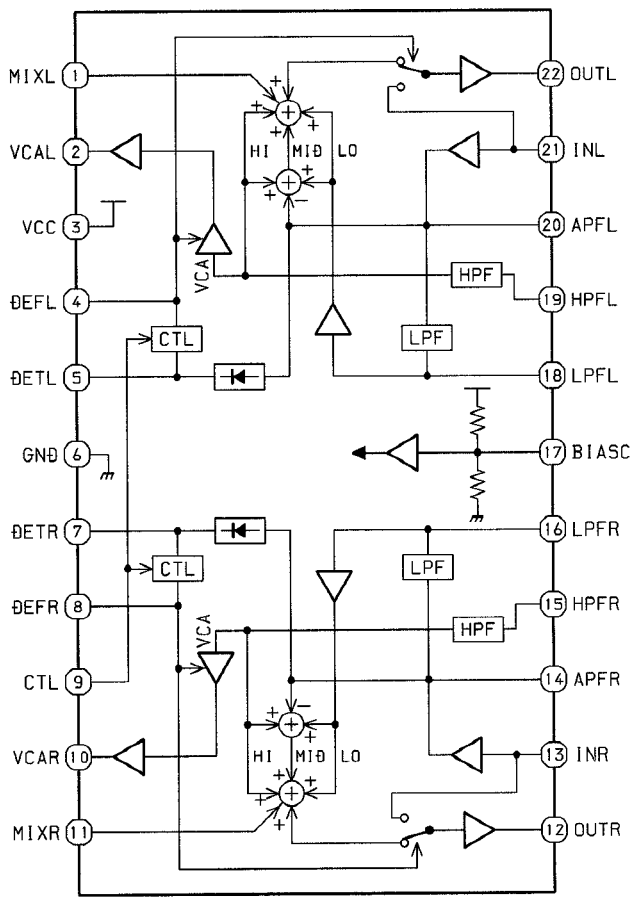


INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

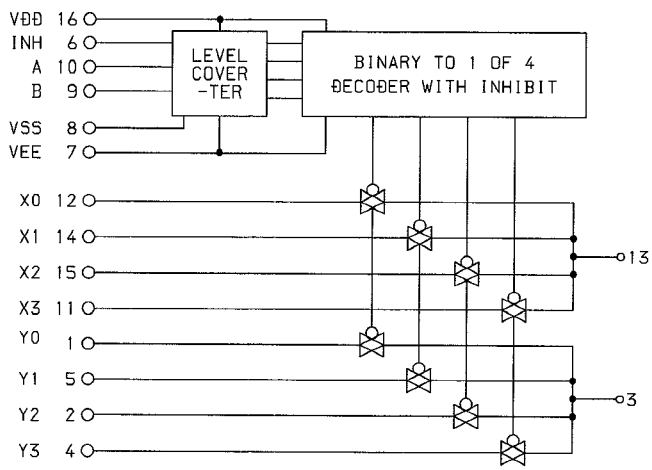
∞ HI IMPEDANCE

NOTE : INPUT "H" ACTIVE

IC, BA3880

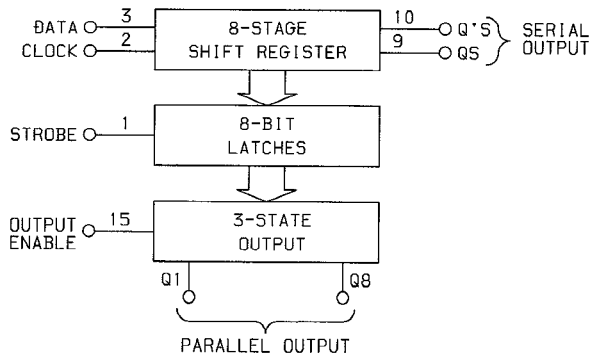


IC, BU4052BCF

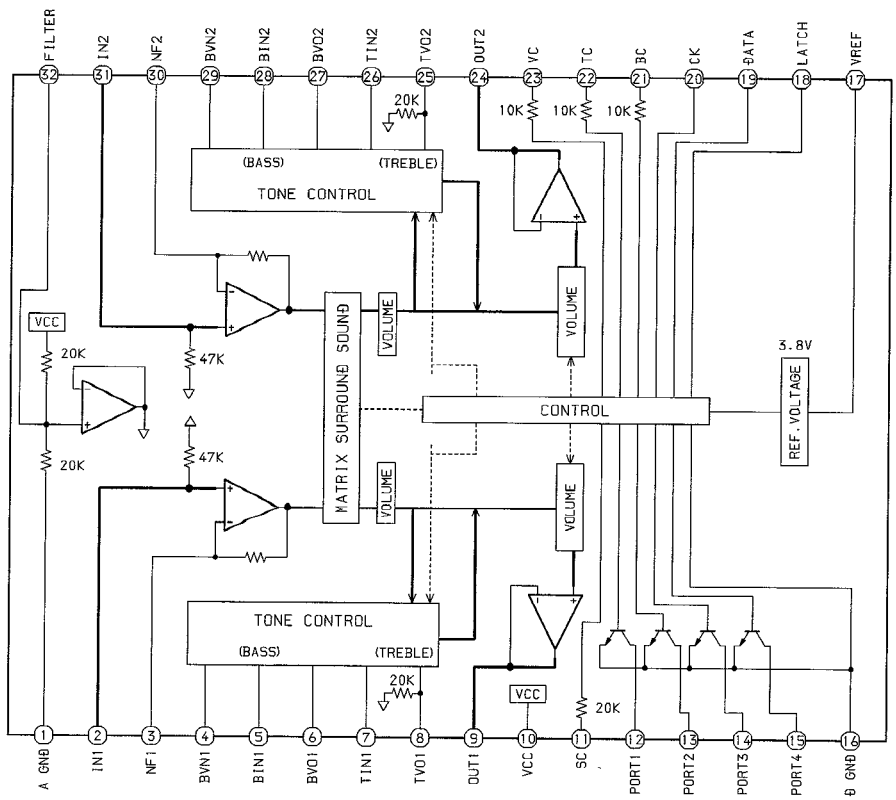


TRUTH TABLE

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE



IC, BH3854



IC DESCRIPTION

IC, TC9284BF

Pin No.	Pin Name	I/O	Description
1	GNDA	—	D/A converter R-channel analog GND.
2	RO	O	R-channel data positive output.
3	$\overline{RO}$	O	R-channel data inverted output.
4	VDA	—	D/A converter power supply.
5	$\overline{LO}$	O	L-channel data inverted output.
6	LO	O	L-channel data positive output.
7	GNDA	—	D/A converter L-channel analog GND.
8-10	$\overline{TEST3}$-$\overline{TEST5}$	I	TEST pin. Normally "H" or open.
11	SBOK	O	Sub code Q data CRCC judgment result output. Judgment result OK: H
12	VDDD	—	Digital power supply. (+5 V)
13	GNDD	—	Digital GND.
14-17	BUS0-BUS3	I/O	μprocessor interface, data input/output.
18	CCE	I	μprocessor interface, chip enable signal input. When "L" : BUS 3-0 are active
19	BUCK	I	μprocessor interface, clock input.
20	PFCK	O	PB frame sync output.
21	$\overline{RST}$	I	Reset signal input. "L" at reset.
22	SUBSYC	O	Sub code block sync output. When sub code is detected,"H" at S1 position.
23	SUBD	O	Sub code P-W output.
24	CLCK	I	Sub code P-W data read clock input.
25	VDDD	—	Digital power supply. (+5 V)
26	GNDD	—	Digital GND.
27	DFCT	O	Defect detection signal output. When defect is detected: "VREF", normally "HiZ".
28	TEL2	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
29	TEL1	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
30	TGUL	O	Analog switch output for tracking servo gain up. Polarity in gain-up mode and normal mode can be selected by command.
31	TGUH2	O	Analog switch output for tracking servo gain up. "HiZ" for gain-up, normally "VREF".
32	TUGH1	O	TGUH1 during normal playback. TGUH2: not used
33	TKIC	O	Tracking actuator kick signal output. NKICx and CKICx are used for kick during tracking gain adjustment. "VREF" for outermost track."O" for moving toward inner track. Normally "HiZ".
34	FMON	O	Analog switch output to turn ON/OFF the feed servo. "HiZ" to turn ON servo. "VREF" to turn OFF servo.
35	$\overline{TEST1}$	I	TEST pin. Normally "H" or open.
36	FMFB	O	Feed motor FWD/BWD direction control signal output."2VREF" for outmost track. "O" for moving toward inner track. Normally "HiZ".
37	$\overline{TEST}$	I	TEST pin. Normally "H" or open.
38	DMON	O	Analog switch output to select gain of the disc motor drive circuit. "HiZ" for CLV servo OFF, "HiZ" or "VREF" can be selected by command.

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>39</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo AFC signal output.
<table>
<tr><th>Operation</th><th>Command</th><th>DMFC output</th></tr>
<tr><td>Motor acceleration</td><td>DMFK</td><td>“2VREF”</td></tr>
<tr><td>CLV servo ON</td><td>DMSV</td><td>AFC signal (PWM)</td></tr>
<tr><td>Motor brake</td><td>DMBK</td><td>“L”</td></tr>
<tr><td>CLV servo OFF</td><td>DMOFF</td><td>“VREF”</td></tr>
</table></td></tr>
<tr><td>40</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo APC signal output.</td></tr>
<tr><td>41</td><td>2VREF</td><td>—</td><td>Analog power supply. (twice the “VREF” voltage)</td></tr>
<tr><td>42</td><td>SEL</td><td>O</td><td>Servo mode select output. It turns ON/OFF the laser diode (LD) and focus servo.
<table>
<tr><th>SEL output</th><th>LD</th><th>Focus servo</th><th>Operating mode</th></tr>
<tr><td>“L”</td><td>OFF</td><td>OFF</td><td>LD OFF</td></tr>
<tr><td>“HiZ”</td><td>ON</td><td>OFF</td><td>Focus search</td></tr>
<tr><td>“H”</td><td>ON</td><td>ON</td><td>Focus ON (normal play)</td></tr>
</table></td></tr>
<tr><td>43</td><td>FCSI</td><td>O</td><td>Focus actuator drive signal output during focus search mode. “VDDA” to move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>44</td><td>FKIC</td><td>O</td><td>Focus actuator drive signal output during focus adjustment mode. “VDDA” to move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>45, 46</td><td>FEL1, FEL2</td><td>O</td><td>Focus gain adjustment analog switch output. “VREF” or “HiZ”.</td></tr>
<tr><td>47</td><td>FEI</td><td>I</td><td>Focus error signal input.</td></tr>
<tr><td>48</td><td>TESH</td><td>I</td><td>Analog switch input to track error signal sample-and-hold.</td></tr>
<tr><td>49</td><td>TEOF</td><td>O</td><td>Focus gain adjustment analog switch output.“VREF” when tracking servo off.</td></tr>
<tr><td>50</td><td>SBAD</td><td>I</td><td>Sub beam added signal input.</td></tr>
<tr><td>51</td><td>RFRP</td><td>I</td><td>RF ripple signal input.</td></tr>
<tr><td>52</td><td>VREF</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>53</td><td>RFI</td><td>I</td><td>RF signal input.</td></tr>
<tr><td>54</td><td>GNDA</td><td>—</td><td>Analog GND.</td></tr>
<tr><td>55</td><td>DTSC2</td><td>O</td><td>Data slice control EFM signal inverted output.</td></tr>
<tr><td>56</td><td>MONI T</td><td>O</td><td>Internal signal monitored output. EFMO, PLCK or LOCK signals can be selected by command. Can be muted. (Not used)</td></tr>
<tr><td>57</td><td>DTSC 1</td><td>O</td><td>Data slice control EFM signal positive polarity output.</td></tr>
<tr><td>58</td><td>VDDA</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>59</td><td>PDCNT</td><td>I</td><td>PDO output control signal input. “L” to fix to “HiZ” forcibly. “H” : normal output.</td></tr>
<tr><td>60</td><td>PDO</td><td>O</td><td>Phase error signal between EFM and PLCK signals is output.</td></tr>
<tr><td>61</td><td>TMAX</td><td>O</td><td>TMAX detected result output.
<table>
<tr><th>TMAX detected result</th><th>TMAX output</th></tr>
<tr><td>Longer than specified cycle</td><td>“L”</td></tr>
<tr><td>Shorter than specified cycle</td><td>“VREF”</td></tr>
<tr><td>Within specified cycle</td><td>“HiZ”</td></tr>
</table></td></tr>
<tr><td>62</td><td>LPFN</td><td>I</td><td>Low-pass filter amplifier inverted input.</td></tr>
</table>

Pin No.	Pin Name	I/O	Description
63	LPFO	O	Low-pass filter amplifier output.
64	VCOF	O	VCO filter output.
65	TESTX	I	TEST pin. Normally "H" or "L" .(Connected to +5 V)
66	$\overline{HS}$	O	Double speed mode output. "H" : normal speed. "L" : double speed
67	GNDD	—	Digital GND.
68	SPDA	O	Processor status signal output.
69	COFS	O	Correction circuit frame clock (7.35 kHz) output.
70	WDCK	O	Word clock (88.2 kHz) output. SUBQ, BUF0V or 1PF can be selected by the μprocessor command. (Not used)
71	CHCK	O	Channel clock (44.1 kHz) output. "L"for L-channel. "H" for R-channel.
72	BCK	O	Bit clock (1.4112 MHz) output.
73	AOUT	O	Audio data output. (Not used)
74	EMPH	O	Emphasis ON/OFF select signal. "H" : emphasis ON. "L" for emphasis OFF
75	DOUT	O	DIGITAL SIGNAL output.
76	$\overline{TEST2}$	I	TEST pin. Normally "H".
77	VDDX	—	Crystal oscillator circuit power supply.
78	XI	I	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
79	XO	O	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
80	GNDX	—	Crystal oscillator GND.

IC, TA2065F

Pin No.	Pin Name	I/O	Description
1	RFO	O	RF amp (RF AMP) output terminal.
2	RFI	I	RF ripple signal generating circuit input terminal.
3	VRO	O	VR amp output terminal.
4	2VRO	O	2VR amp output terminal.
5	RFRP	O	RF ripple signal output terminal.
6	SBAD	O	Defects detection signal output terminal.
7	DFIN	I	Defect detecting comparator positive phase input terminal.
8	FEP	I	Focus error balance adjusting input terminal.
9	FEN	I	Focus error amp (FE AMP) negative phase input terminal.
10	FEO	O	Focus error amp (FE AMP) output terminal.
11	FEI	I	Focus output amp (FS AMP) positive phase input terminal.
12	FHLD	I	Hold switch terminal for defect.
13	FEL1	I	Focus gain adjusting terminal.
14	FEL2	I	Focus gain adjusting terminal.
15	FSN	I	Focus output amp (FS AMP) negative phase input terminal.
16	FSO	O	Focus output amp (FS AMP) output terminal.
17	COSC	O	Focus search signal generating capacitor connecting terminal.
18	OSCI	I	Focus search signal generating built-in current source control input terminal.
19	GND	—	Ground terminal.
20	VCC	—	Power source terminal.
21	SEL	I	Analog switch control signal input terminal.
22	DMEP	I	Disc motor amp (DM AMP) positive phase input terminal.
23	DMEN	I	Disc motor amp (DM AMP) negative phase input terminal.
24	DMEO	O	Disc motor amp (DM AMP) output terminal.
25	DFCT	I	Defect detecting comparator negative phase input terminal.
26	FMSO	O	Feed motor output amp (FMS AMP) output terminal.
27	FMSN	I	Feed motor output amp (FMS AMP) negative phase input terminal.
28	FMSP	I	Feed motor output amp (FMS AMP) positive phase input terminal.
29	THLD	I	Hold switch terminal for defect.
30	TS2O	O	Tracking servo amp 2 (TS2 AMP) output terminal.
31	TS2N	I	Tracking servo amp 2 (TS2 AMP) negative phase input terminal.
32	TS2P	I	Tracking servo amp 2 (TS2 AMP) positive phase input terminal.
33	TS1N	I	Tracking servo amp 1 (TS1 AMP) negative phase input terminal.
34	TS1P	I	Tracking servo amp 1 (TS1 AMP) positive phase input terminal.
35	TSO	O	Tracking output amp (TS AMP) output terminal.
36	TEL1	I	Tracking gain adjusting terminal.
37	TEL2	I	Tracking gain adjusting terminal.
38	TSN	I	Tracking output amp (TS AMP) negative phase input terminal.
39	TPO	O	Sub-beam I-V amp output terminal.
40	TPI	I	Sub-beam I-V amp input terminal.
41	TNI	I	Sub-beam I-V amp input terminal.

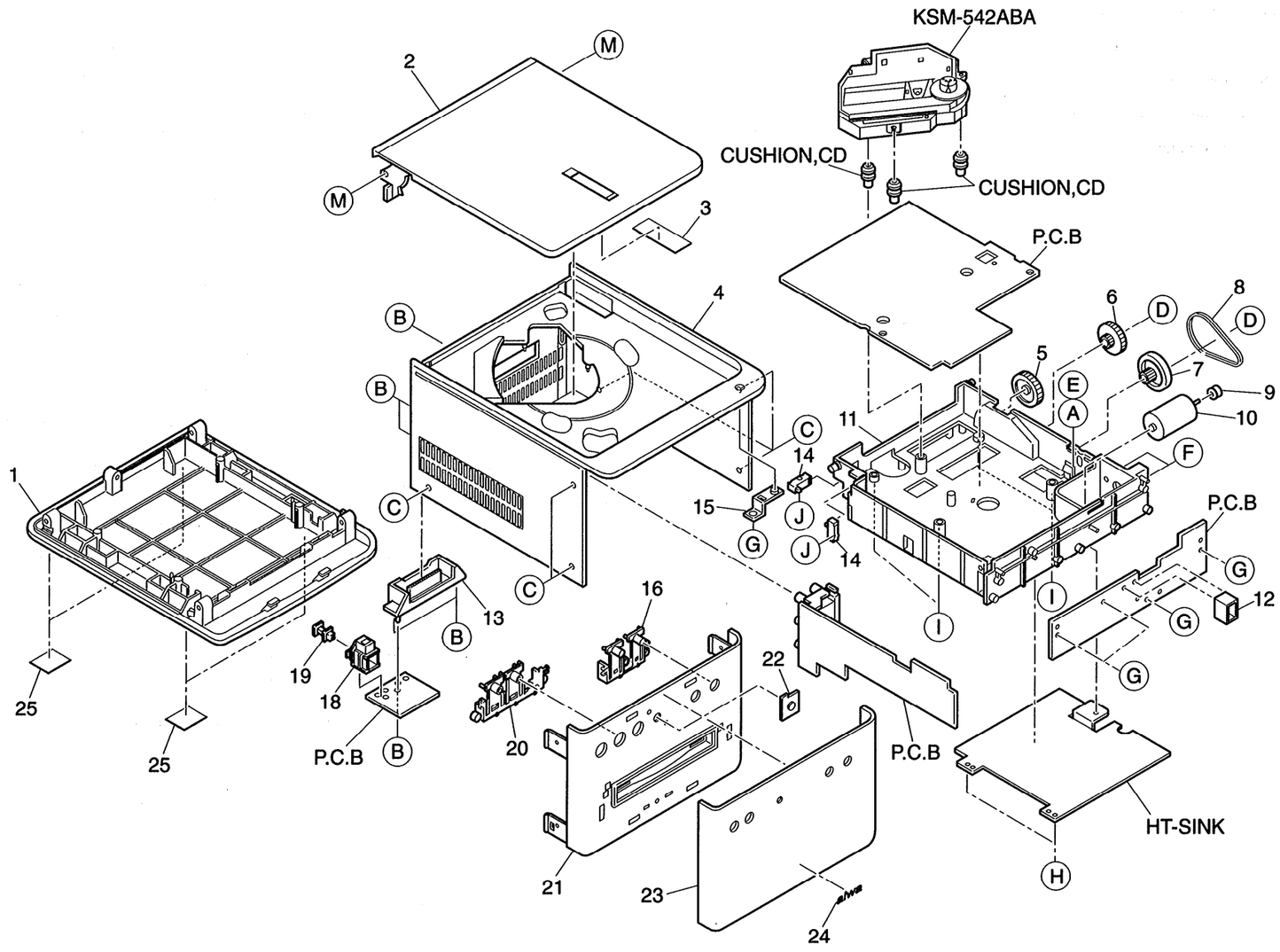
Pin No.	Pin Name	I/O	Description
42	TNO	O	Sub-beam I-V amp output terminal.
43	FNI	I	Main-beam I-V amp input terminal.
44	FPI	I	Main-beam I-V amp input terminal.
45	LDO	O	Laser diode amp output terminal.
46	MDI	I	Monitor photo diode amp input terminal.
47	RFN	I	RF amp negative phase input terminal.
48	RFT	I	RF amp peaking terminal.

IC, TC9257F

Pin No.	Pin Name	I/O	Description
1	XT	I	Connects 3.6MHz, 4.5MHz, 7.2MHz or 10.8MHz crystal oscillator to supply reference frequency and internal clock.
2	$\overline{XT}$	O	
3	PERIOD	I	Serial I/O ports. These pins transfer data to and from the controller to set divisors and dividing modes, and to control the general-purpose counter and general-purpose I/O ports.
4	CLOCK	I	
5	DATA	I/O	
6	OT-1	O	N channel open drain port pins, for such uses as control signal output. These pins are set to the OFF state when power is turned on. (On TC9256P and TC9256F, OT-4 can be used as a CMOS output pin by switching it with DO2.)
7	OT-2	O	
8	OT-3	O	
9	OT-4	O	
10	I/O-5/CLK	I/O	CMOS structure allows free use of these ports for input or output. Ports are set for input when the power is turned on. On TC9257P and TC9257F, I/O-5 can be switched for use as a system clock output pin.
11	I/O-6	I/O	
12	VDD	—	Applies 5.0V±10%.
13	AMIN	I	These pins input FM and AM band local oscillator signals by capacitor coupling. FMIN and AMIN operate at low amplitude.
14	FMIN	I	
15	GND	—	Applies 5.0V±10%.
16	I/O-9 (-6)/IFIN2	I/O	General-purpose I/O port input/output pins. Can be switched for use as input pins to measure general-purpose counter frequencies. The frequency measurement function has such uses as measuring intermediate frequencies (IF). These pins features built-in amps. Data are input by capacitor coupling FMIN and AMIN operate at low amplitude. Note: Pins are set for input when power is turned on.
17	I/O-8 (-5)/IFIN1	I/O	
18	I/O-7/SCIN	I/O	General-purpose I/O port input/output pin. Can be switched for use as signal input pin to measure low-frequency signal cycles. (Not available on TC9256P and TC9256F.) Note: This pin is set for input when power is turned on.
19	DO1	O	These pins are for phase comparator tristate output. DO1 and DO2 are output in parallel. (On TC9256P and TC9256F, DO2 can be switched for use as a general-purpose output port.)
20	DO2 (DO2/OT-4)	O	

(*) Pin numbers 1-8 are common to TC9256P, TC9256F, TC9257P and TC9257F.
(*) Pin names and numbers on parentheses apply to TC9256P and TC9256F.

MECHANICAL EXPLODED VIEW 1/2



MECHANICAL PARTS LIST 1/2

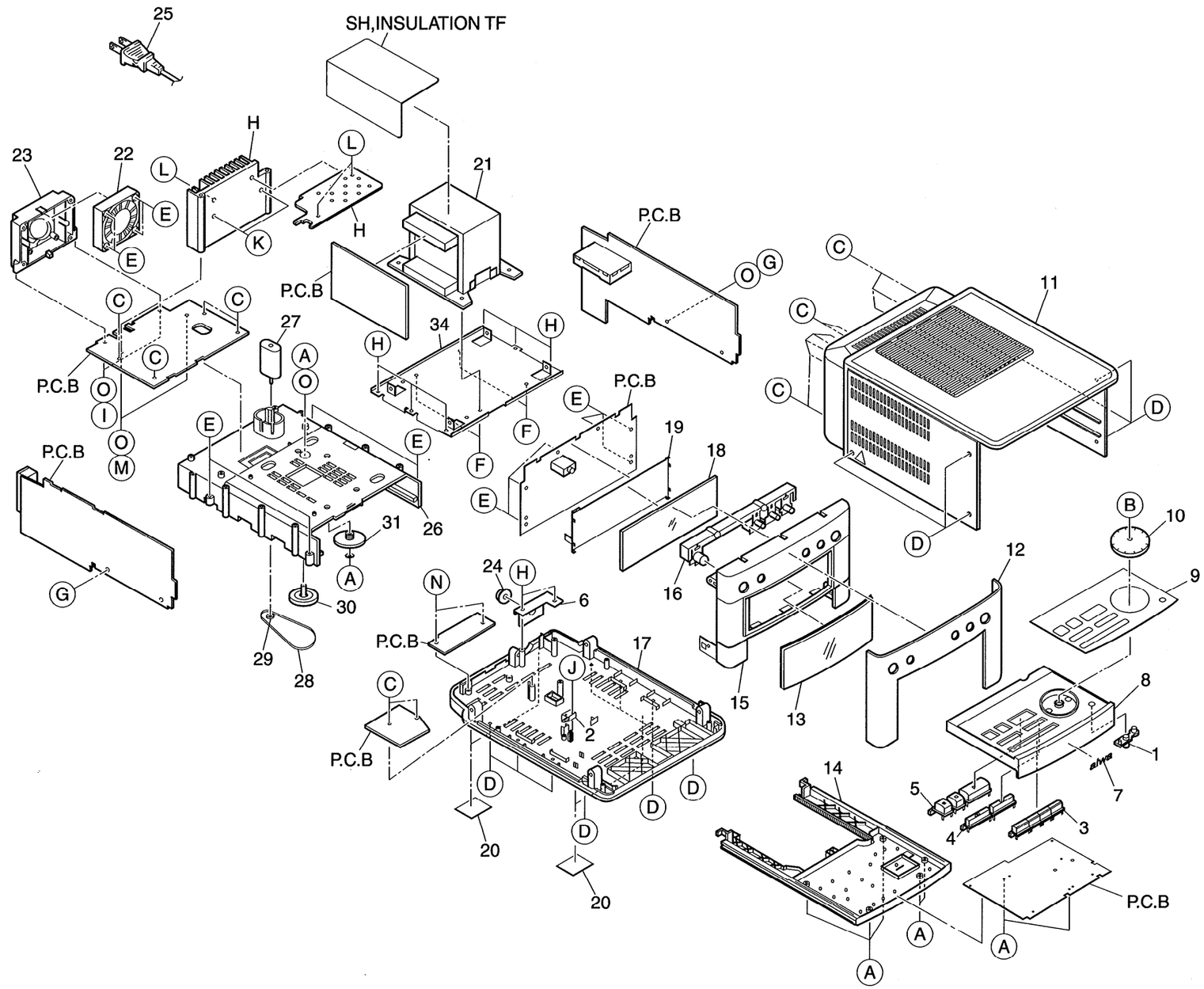
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-CL1-050-020		CAB,BOTTOM CD
2	S8-CL1-080-200		DOOR,CD
3	S8-CL1-090-000		WINDOW,CD
4	S8-CLB-030-100		CAB,TOP CD
5	S8-CL1-150-000		GEAR,DOOR CD
6	S8-CL1-160-000		GEAR,DOOR CD
7	S8-CL1-170-000		GEAR,DOOR CD
8	S8-CL1-630-000		BELT,PULLEY CD 48-1.6-1.6
9	S8-CL1-180-000		GEAR,DOOR CD
10	S1-215-370-000		MOTOR RF-370CA-15370 12V
11	S8-CL1-070-000		CHASSIS CD
12	S8-CL1-450-000		HOLDER REMOTE SENSOR
13	S8-CL1-460-020		CLAMP CABLE
14	S0-000-020-000		SW,MICRO MQS-2
15	S8-CL1-120-010		KNOB,EJECT CD(GRY)
16	S8-CL1-110-100		KNOB,SKIP
17	S7-CD3-400-000		COVER OPTICAL
18	S7-CD3-390-000		HOLDER OPTICAL
19	S8-CL1-640-000		FOOT,RUBBER 10-10-3
20	S8-CL1-100-200		KNOB,PLAY SET(B)
21	S8-CLB-040-000		PANEL FRONT CD
22	S8-CL1-480-000		LENS,SENSOR REMOTE
23	S8-CLB-010-200		PLATE COVER FRONT CD<75U>
23	S8-CLB-010-100		PLATE COVER FRONT CD<70U>
24	S8-CL1-800-000		BADGE AIWA
A	87-081-438-010		FW,3-6-0.4
B	87-352-095-010		SCREW,ST3-8
C	87-741-097-410		SCREW,ST3-12
D	87-743-074-410		SCREW,ST2.6-8
E	87-741-096-010		SCREW,3-10MM PM
F	87-251-092-410		SCREW,M3-4
G	87-261-074-010		SCREW,ST2.6-8MM BB
H	87-743-073-410		SCREW,ST2.6-6
I	87-342-076-010		SCREW,ST2.6-12MM PAB
J	87-B10-026-010		SCREW,ST1.7-8
K	87-353-533-310		SCREW,ST1.7-5

MECHANICAL PARTS LIST 2/2

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-CL1-350-010		KEY,SOUND
2	S0-000-010-010		SW,MIRCO MLS-1
3	S8-CL1-390-010		KEY,SET-FUNCTION
4	S8-CL1-380-100		KEY,SET-F.F
6	S8-CL1-660-000		BRACKET CORD AC
5	S8-CL1-370-100		KEY,SET-CD(GRY)
7	S8-CL1-800-000		BADGE AIWA
8	S8-CL1-200-020		PANEL CONTROL TOP
9	S8-CLB-710-100		PLATE PANEL CONTROL
10	S8-CL1-230-010		KEY,JOG GREY
11	S8-CL1-040-200		CAB,TOP AMP(B)
12	S8-CLB-760-100		PLATE PANEL FRONT AMP
13	S8-CL1-190-100		LENS,DISPLAY
14	S8-CL1-210-000		TRAY,PANEL CONTROL
15	S8-CL1-020-020		PANEL FRONT AMP(GRY)
16	S8-CL1-400-010		KNOB,POWER(GRY)
17	S8-CL1-060-020		CAB,BOTTOM AMP
18	S0-041-510-000		LCD,DISPLAY
19	S8-CL1-680-000		BKT DISPLAY LCD
20	S8-CL1-640-000		FOOT,RUBBER 10-10-3
⚠ 21	S5-166-360-200		POWER TF EI-66/36 120V
⚠ 21	S1-667-260-000		PT,EL EI-16
22	S1-000-900-090		COOLING FAN
23	S8-CL1-240-020		BRACKET FAN
24	S0-408-000-030		BUSHING CORD AC
⚠ 25	S1-171-201-100		CORD,POWER 6.5
26	S8-CL1-220-000		CHASSIS PANEL CONTROL
27	S0-611-190-000		MOTOR,FF-050SH-11190
28	S8-CL1-410-000		PULLEY MOTOR TRAY
29	S8-CL1-620-000		BELT,PULLEY AMP
30	S8-CL1-420-000		GEAR,TRAY
31	S8-CL1-430-000		CENTER GEAR TRAY
A	87-357-036-010		SCREW ST 2-8
B	87-268-508-310		SCREW,ST1.4-3.5
C	87-352-095-010		SCREW,ST3-8
D	87-741-097-410		SCREW,ST3-12
E	87-261-075-010		SCREW,ST2.6-10MM BB
F	87-255-169-410		SCREW,4-6
G	87-261-094-410		SCREW,M3-6
H	87-352-097-210		SCREW,ST3-12
I	87-261-074-010		SCREW,ST2.6-8MM BB
J	87-067-911-010		SCREW,ST1.7-10
K	87-078-157-010		SCREW,ST3-16
L	87-253-095-410		SCREW 3-8
M	87-751-096-410		SCREW,3-10
N	87-251-094-410		SCREW,ST3-6
O	87-078-044-010		FW,3.2-8-1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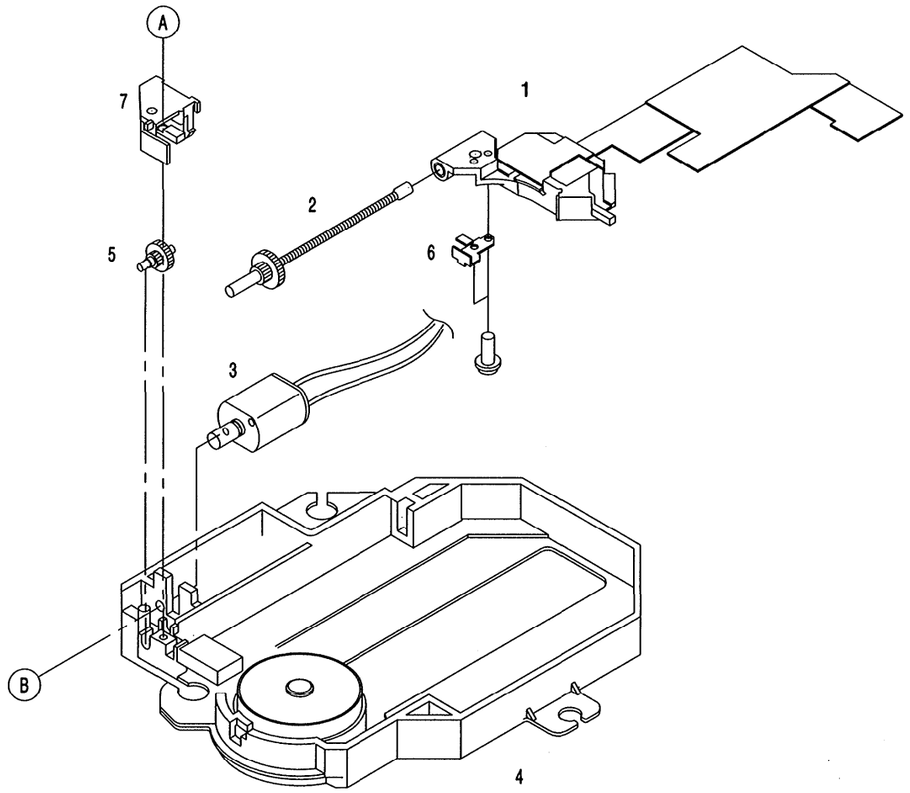
CD MECHANISM EXPLODED VIEW 1/1



CD MECHANISM PARTS LIST 1/1

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If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	98-848-470-020		KSS-542A
2	9X-262-611-810		SLED SCREW ASSY
3	9A-491-080-4A0		SLED MOTOR ASSY
4	9A-491-207-3A0		MD ASSY
5	92-627-751-010		GEAR BN
6	92-627-754-010		LACK SPRING
7	92-646-389-010		HOLDER
A	92-646-352-010		TAPPING SCREW B2-8
B	92-627-668-010		SCREW M2-2.5

SPEAKER PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	88-CL1-932-010		PANEL,FR<75U>
1	88-CLB-941-010		PANEL,FR W<70U>
2	88-CL1-953-010		SPKR,100<70U>
2	88-CL1-936-010		SPKR,W 100<75U>
3	88-CL1-954-010		SPKR,60<70U>
3	88-CL1-937-010		SPKR,TW 25<75U>
4	88-CL1-860-010		GRILE FRAME ASSY MD95<75U>
5	88-CL1-943-010		COVER,TOP<70U>
6	88-CLB-959-010		GRILLE,FRAME B ASSY<70U>
7	88-CLB-958-010		GRILLE,FRAME T ASSY<70U>
8	88-CLB-957-010		GRILLE,FRAME W ASSY<70U>

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-CLB-910-110		INSTRUCTION BOOK<75U>
1	S8-CLB-910-210		INSTRUCTION BOOK(M70US)<70U>
2	S8-CLR-EMB-000		RC,RC-M70(EX)
3	S0-27N-F90-000		ANT,LOOP AM
4	S0-37N-F90-100		FM FEEDER-ANT/PE TWIN WIRE

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
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